

**PHASE I ENVIRONMENTAL SITE ASSESSMENT
OF AREAS AFFECTED BY THE
BULLARD WASH OUTFALL PROJECT
IN GOODYEAR, ARIZONA**

Prepared for:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
2801 West Durango Street
Phoenix, Arizona 85009

Prepared by:

GROWTH ENVIRONMENTAL SERVICES, INC.
4041 North Central Avenue, Suite 1050
Phoenix, Arizona 85012
(602) 248-8808

May 1, 1995

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May 1, 1995
Growth File AR390-1901





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May 1, 1995

Mr. William Knight
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

SUBJECT: PHASE I ENVIRONMENTAL SITE ASSESSMENT OF AREAS AFFECTED BY THE BULLARD WASH OUTFALL PROJECT IN GOODYEAR, ARIZONA, PURCHASE ORDER NUMBER: PC95B03000126

Dear Mr. Knight:

Growth Environmental Services, Inc. is pleased to submit this Phase I Environmental Site Assessment for the subject Site. This report is provided in completion of Growth's agreement dated February 8, 1995.

If you have any questions concerning this document, please call either of us at (602) 248-8808. We appreciate the opportunity to complete this work for the Flood Control District of Maricopa County.

Respectfully submitted,

GROWTH ENVIRONMENTAL SERVICES, INC.

Kim Chambers Bergsten
Environmental Scientist

Dennis C. Knudsen, P.E.
Manager - Technical Services

Enclosure: Phase I ESA Report

cc: Growth File AR390-1901.kb

FLOOD CONTROL DISTRICT RECEIVED MAY 02 1995	
CHIEF	PLM
ASST. CHIEF	ASST. PLM
ADM. ASST.	ADM. ASST.
INSPECTION	INSPECTION
PLANNING	PLANNING
TRAINING	TRAINING
RESEARCH	RESEARCH

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LIST OF ACRONYMS

SPECIFIC TO THE ASTM STANDARD

ASTM- American Society for Testing and Materials.

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act of 1980 (as amended, 42 USC § 9601 *et seq.*).

CERCLIS - Comprehensive Environmental Response, Compensation and Liability Information System (maintained by EPA).

CFR- Code of Federal Regulations.

EPA - United States Environmental Protection Agency.

EPCRA - Emergency Planning and Community Right to Know Act (also know as SARA Title III), 42 USC § 11001 *et seq.*

ERNS - Emergency Response Notification System.

ESA - Environmental Site Assessment (different than an *environmental audit*).

FOIA - U.S. Freedom of Information Act (5 USC 552 *et seq.*).

FR - Federal Register.

LUST- Leaking Underground Storage Tank.

MSDS - Material Safety Data Sheet.

NCP - National Contingency Plan.

NPDES - National Pollution Discharge Elimination System.

NPL - National Priorities List.

PCBs - Polychlorinated biphenyls.

PRP - Potentially responsible party (pursuant to CERCLA 42 USC § 9607(a)).

RCRA- Resource Conservation and Recovery Act (as amended, 42 USC § 6901 *et. seq.*).

SARA - Superfund Amendments and Reauthorization Act of 1986 (amendment to CERCLA).

USC - United States Code.

USGS - United States Geological Survey.

UST - Underground Storage Tank.

1 SUMMARY

Growth Environmental Services, Inc. (Growth) has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-93 of an approximate 300 acre area of land in the Bullard Wash Outfall Study Area, described as Flood Control District parcel numbers WT10-20, WT10-22, WT10-23, WT10-25, WT10-28, WT10-30, WT10-34, WT10-40, WT10-37 and WT10-38, in Goodyear, Arizona.

Growth has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-93 of a parcel of land, totaling approximately 300 acres and comprised of several parcels of land located in the area bordered by Lower Buckeye Road on the north, Broadway Road on the south, Bullard Avenue on the East and Estrella Parkway on the West, in Goodyear, Arizona. Any exceptions to, or deletions from, this practice are described in Section 2.4 of this report.

This assessment revealed that the Site contains a mixture of land uses including irrigated agricultural land, industrial, a farm compound, and riparian floodplains. The Site is located within and adjoins the PGA Superfund site. Groundwater contamination in the area by volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) has been confirmed. Service monitor, observation, and injection wells are located in the area of the proposed Bullard Wash Outfall Project. In addition, the injection pipeline for the Phoenix Goodyear Airport (PGA) is located within or near the 400 foot wide area of WT10-20. These wells are located Subunit A, the shallow water bearing unit. Groundwater in the vicinity of the Site is encountered approximately 40 feet below ground surface (bgs).

An exhaustive list of environmental concerns are located in and around the Site. Based on the proposed land use for the Bullard Wash Outfall Project, Growth has narrowed the list of environmental conclusions to the areas affected by construction of the Bullard Wash Outfall Project. Due to the broad scope of this project, these conclusions and recommendations represent the most significant findings of this investigation, and do not necessarily represent all potential environmental concerns for the Site. Based on discussions with the Flood Control District of Maricopa County (FCDMC) five issues appear to be the most significant. These issues concern: 1) the routing of the channel to avoid disturbing the injection pipeline and network of wells on the PGA, 2) insuring worker safety, 3) the possibility of encountering hazardous materials during the construction of the project, 4) disposition of excavated materials, and 5) preventing migration of contaminants into lower levels of the aquifer. Growth's conclusions and recommendations, which are oriented specifically towards these concerns are outlined in the following report.

2 INTRODUCTION

2.1 PURPOSE

Growth has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-93 for the Bullard Wash Outfall Study Area. The Site consists of approximately 300 acres described as Flood Control District parcel numbers WT10-20, WT10-22, WT10-23, WT10-25, WT10-28, WT10-30, WT10-34, WT10-37, WT10-38 and WT10-40 in Goodyear Arizona. This Phase I ESA is intended to serve as an appropriate, commercially prudent and reasonable inquiry regarding the potential for recognized environmental conditions in connection with the Site.

2.2 SPECIAL TERMS AND CONDITIONS

This Phase I ESA has been completed and the report prepared in accordance with the ASTM *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM Designation E-1527-93)*. The scope of Growth's services for this project is included as Appendix A.

2.3 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The Phase I ESA process is not intended to provide a guarantee regarding the presence or absence of petroleum products or hazardous substances on the Site. The findings and conclusions of this assessment are limited by the following factors:

1. The scope of work agreed to between Growth and FCDMC is not an exhaustive inquiry, but represents an appropriate, commercially prudent, and reasonable level of effort. In accordance with the ASTM Standard, this assessment serves to reduce, but not eliminate, the level of uncertainty regarding the potential for recognized environmental conditions on the Site.
2. The availability of data may be limited, particularly in regards to historical Site uses. Where such limitations are material to the conclusions of the assessment, they are identified in the report.
3. Growth cannot verify the accuracy of data obtained from government agencies, commercial sources, interview subjects, and other third-party sources.

This Phase I ESA represents conditions which existed at the time the work was performed, and should not be considered indicative of conditions which may exist at a substantially later date. The assessment has been completed in accordance with a reasonable understanding of the recognized environmental conditions and regulatory standards which existed at the time the work was performed.

2.4 LIMITING CONDITIONS AND METHODOLOGY USED

This Phase I ESA has been prepared specifically for the FCDMC, for their use and reliance in the environmental assessment of the Site. Reliance on this report by any other party must be at that party's sole responsibility, unless such reliance has been specifically authorized in writing by FCDMC and Growth.

A letter was sent to property owners and/or tenants who had specific conditions attached to the right-of-entry. Site visits were sent up for March 7 and 8, 1995, and owners or tenants were invited to accompany Growth personnel on the site visit. FCDMC provided Growth copies of the Right of Entry Agreements. Copies of the right of entry agreements and letters of advance notice are provided in Appendix C.

Growth personnel did not enter active agricultural land except by road access to prevent damage to crops. All roads, trails, and the perimeter of the Site were walked. Vacant land was walked in transects at a distance that the Site could be viewed in its entirety. Developed portions of the Site were thoroughly walked except where locked buildings were present. Growth did not access the interior of residential structures on the Site.

A chain-of-title report was specifically excluded from the Phase I ESA.

An exhaustive list of environmental concerns are located on and around the Site. Based on the proposed land use for the Bullard Wash Outfall Project, Growth has narrowed the list of environmental conclusions to the areas affected by construction of the Bullard Wash Outfall Project, as describes by FCDMC personnel.

3 SITE DESCRIPTION

3.1 LOCATION AND LEGAL DESCRIPTION

The Site is generally bordered by Lower Buckeye Road on the north, Broadway Road on the South, Bullard Avenue on the East and Estrella Parkway on the west, in Goodyear, Arizona. The Site consists of approximately 300 acres. Parcels WT10-20, 22, 23, 25, 28 and 30 are more generally located in the West Half of Section 20, Township 1 North, Range 1 West. Parcel WT10-37 is a 400 foot strip of land located 1080 feet from the western boundary of the Northwest Quarter of Section 29, Township 1 North, Range 1 West. Parcels WT10-38, 34 and 40 are located in the Southwest Quarter of Section 29, Township 1 North, Range 1 West. Legal descriptions for each parcel are contained in the Right of Entry Agreements provided in Appendix C.

3.2 SITE AND VICINITY CHARACTERISTICS

Topography and Drainage

Growth personnel reviewed the USGS topographic map for the Perryville, Arizona Quadrangle, dated 1957 and photo-revised in 1982, to confirm field observations of topography and drainage on the subject property. According to the USGS map, the Site ranged in elevation from approximately 900 feet to 950 feet above mean sea level (msl), gradually sloping downward from the northeast to the southwest. The Site is located north of the Gila River.

Irrigation canals cross the agricultural land. Other drainages are located on the Site, including Bullard Wash. Bullard Wash is the drainage ditch that parallels the western boundary of the PGA, formerly the Phoenix-Litchfield Municipal Airport. This drainage flows under the Southern Pacific Railroad tracks and Highway 85 before turning in a westerly direction to Estrella Parkway where it flows in a southerly direction and appears to discharge into the White Tanks Canal. The Buckeye Canal is an approximately east-west flowing irrigation canal located near the southern end of the Site. South of the Buckeye Canal is a ephemeral channel that drains directly into the Gila River, as well as a portion of the floodplain of the Gila River. Storm water falling onto the Site appears to drain by infiltration, evaporation or overland sheet flow into irrigation canals or other drainage ditches and channels.

Regional Geology and Hydrogeology

The Site lies in the Salt River Valley, a broad alluvial basin within the Basin and Range Physiographic Province, which includes Southern Arizona. The Basin and Range Province is characterized by a series of northwest trending fault-bounded mountain ranges separated by alluvial valleys.

The Salt River Valley is surrounded by mountains composed primarily of granite, metamorphic and volcanic rocks and minor amounts of sedimentary rocks. The valley floor is underlain by thick semi-consolidated basin-fill sediments of varying thickness. The area of the Site is underlain by irregular fluvial and lacustrine deposits of sand, gravel, silt, and clay extending between approximately 1,500 feet bgs at the northern end of the Site and approximately 500 feet bgs near the Gila River (Brown and Pool, 1989).

In the general area of the Site, groundwater has been encountered in the most shallow unit of the regional aquifer at approximately 40 to 50 feet bgs (ADWR, 1989). Three groundwater aquifers have been identified. Two shallow water bearing units are located in the area of the Site. These include Sub-Unit A that extends from generally 60 to 120 bgs and Sub-Unit B which extends from approximately 120 to 240 feet bgs. The deep

groundwater aquifer Sub-Unit C has been generally characterized as being located approximately 240 to 360 feet bgs.

The Site is approximately 1 mile south of a groundwater divide. Groundwater north of Yuma Road flows to the northwest. Groundwater south of Yuma Road flows in a southwesterly direction. Groundwater in the vicinity of the Site appears to flow in a southwesterly direction.

It should be noted that regional hydrogeologic data may not predict site-specific conditions, such as isolated perched-water systems, or local variations in groundwater flow due to recent precipitation or high-volume pumping in the area.

3.3 DESCRIPTIONS OF STRUCTURES, ROADS, AND OTHER IMPROVEMENTS ON THE SITE

Growth personnel visited the Site on March 7 and 8, 1995. Due to the overall size and diverse Site use, each parcel or group of parcels, if contiguous and functionally the same, have been described in detail below. Figures 1 and 2 provide a vicinity map and general site map depicting Site parcels. Detailed Site diagrams are provided as Figures 3 through 9.

WT10-30 - Woods Enterprises. Parcel WT10-30 consisted of an approximately 116 acre parcel of land of which a majority was being used for the production of crops to include barley and alfalfa. Concrete lined irrigation canals provided water to the crops. A farm compound located near the northwest corner of the parcel was used for residences and storage of materials necessary for maintaining the agricultural operations. Structures located in the compound included two residences (2831 and 2879 South Estrella Parkway), one large metal Quonset hut, two small metal Quonset huts, a mobile home, and a small storage shed. It appeared that the Quonset huts were being used as storage sheds. Growth personnel were not able to enter the Quonset huts at the time of the site visit. Numerous pieces of farm equipment were stored on the farm compound.

Thirteen aboveground storage tanks (ASTs) were observed on the site. Four of the ASTs were labeled as containing diesel fuel and were located at various points along the eastern boundary of the Site. One AST marked as containing gasoline was also observed along the northern border of the Site. All five of the ASTs mentioned above had staining on the ground around the area of the tank dispensers. One small portable AST located behind the large metal Quonset hut was marked as containing diesel fuel. Growth personnel were unable to determine whether the tank was being used. Another AST located behind the large Quonset hut was not marked and no staining was observed on the ground around the AST. Two ASTs located to the east of the large residence located in the compound appeared to be utilized for the storage of well water. Another AST located north of that residence was used for the storage of liquid propane. Three other liquid propane storage tanks were observed near the southwestern portion of the parcel, but did not appear to be functional. One other AST was observed east of the large residence. This tank appeared to be temporary and was marked as Treflan®. This substance appeared to be a pesticide used for the maintenance of the crops. According to a farm worker, the agricultural portion of the parcel had been sprayed approximately 72 hours prior to Growth's site visit. The area had temporarily been posted for a 72 hour period with "Do Not Enter." signs. The farm worker Growth personnel spoke to indicated that Treflan was used to control soil nematodes.

Two water production wells and two other features that appeared to be unused water production wells were observed on the Site. One of the wells was observed in a fenced area at the northwest corner of the Site. A two gallon plastic container of what appeared to be oil for the maintenance of the well was observed next to the well. A small oily stain was also observed on the soil next to the well. A second well was observed on the east side of the larger residence on the Site. This well appeared to provide water to the residence. No staining was observed around the well. Two other features observed on the property appeared to be wells that were no longer being used. One of the features was observed in the fenced back yard of the smaller residence on the Site. The

pipe appeared to be approximately 6 inches in diameter and was capped at the time of Growth's site visit. The other feature was observed to the west of the smaller residence. The pipe to this feature appeared to be approximately 4 inches in diameter and protruded from the ground approximately 3 feet. No other wells were observed on the Site.

Five 55-gallon drums were observed near the north entrance to the large metal Quonset hut. One of the drums appeared to be filled with trash and another was marked as hydraulic fluid, but was empty at the time of Growth's site inspection. Three of the drums appeared to be full. One of the drums was marked as containing Pioneer Drip Oil, another was marked as containing transmission fluid, and the third was marked as containing motor oil. Several other containers were observed near the southwest corner of the Site. The containers consisted of a 55-gallon drum full of an unknown liquid, a 35-gallon drum of an unknown oily liquid, an empty 35 gallon drum, and a 5 gallon container full of an unknown liquid. Several other drums were observed at various points on the subject property and appeared to contain either trash or non-hazardous scrap.

Other items observed on the Site included metal pipes, PVC pipes, lengths of well casing, a pile of what appeared to be asbestos cement pipes in approximately 3 foot lengths, wood and metal debris, two camp trailers, two oil filters, three oxygen cylinders, and many pieces of farm type equipment. Four concrete supports and the remains of what appeared to be a gas or water meter were observed on the south side of the Quonset hut located closest to the large residence.

Five pole-mounted electrical transformers were observed near the western border of the Site. None of the transformers appeared to be leaking.

Parcel WT10-20 PGA. Parcel WT10-20 consisted of a 400 foot wide strip of land located near the southwest corner of the PGA. WT10-20 was located near the south end of the airport runway. No structures were observed on WT10-20 at the time of Growth's site inspection. A number of dirt roads observed at various points on WT10-20 provided access for airport personnel, as well as access to the many groundwater monitoring wells located in this section of the airport property. Bullard Wash is located near the western edge of the PGA. There was running water in the ditch at the time of Growth's site inspection. A large pile of soil was observed near the southern boundary of WT10-20. A chain link fence was located along the western and southern boundaries of WT10-20. At the time of Growth's site visit, heavy equipment was being used for grading near the northern boundary of WT10-20. Several small piles of soil and vegetation located along the drainage ditch appeared to be from recent ditch cleaning activities.

WT10-20 Agricultural Land. In addition to the 400 foot strip within the PGA, WT10-20 also consists of an approximately 14-acre parcel of land located south of the lower Buckeye Road alignment and west of the PGA fence line. This 14-acre parcel is a safety buffer for the PGA and is owned by the City of Phoenix. The City of Phoenix leases the irrigated agricultural land to Discovery West Ranch. The parcel was fallow at the time of Growth's site visit.

WT10-28 - Imsalco (Imsamet). Parcel WT10-28 consisted of an approximately 40 acre parcel, developed with a aluminum recycling facility. Imsalco, now known as Imsamet, has owned this facility since 1984 or 1985. The property appears to have had borrow pits or aluminum recycling facilities on the site since the 1940s. Developed areas of the Imsamet facility consist of an office building, weigh scale, 10,000-gallon above-ground diesel AST, and processing equipment, including a bag house, furnace, dryers, mill, maintenance building, piles of aluminum dross, two sumps, a railroad spur, a lined evaporation pond, two storm water retention ponds, equipment storage areas, and two very large piles of aluminum oxide fines. Two wells were observed near the northeast corner of the parcel, as well as two aboveground water storage tanks. A Southwest Gas natural gas pipeline and main crosses the parcel (see Figure 6).

Parcel WT10-22 Southern Pacific Railroad. A railroad line travels east-west across this parcel. A small railroad trestle was observed approximately 1800 feet east of Estrella Parkway where Bullard Wash crosses under the railroad trestle. A spur for the Imsalco facility is located approximately 600 feet east of Estrella Parkway. Several underground utilities are located in the railroad right-of-way. These include a natural gas pipeline and two fiber optic cables.

Parcel WT10-23 - Highway 85 (formerly Highway 80). Growth personnel observed a two lane paved asphalt highway. The study area included an approximate corridor extending 1,800 feet east of Reems Road (Estrella Parkway). North of the highway was an undeveloped right-of-way and the Southern Pacific Railroad. Off-site, a farmstead was located at the southeast corner of Highway 85 and Estrella Parkway. A grass and brush covered area extends along the south side of Highway 85. A drainage channel extends under the highway near the eastern edge of the parcel. Bullard Wash and the main airport drain converge into this drainage channel where it travels in a westerly direction across Parcel WT10-25.

Parcel WT10-25, 37, and 38 - A Tumbling T Ranches. These parcels consist of a 400 foot wide area, located 1,080 feet east of Estrella Parkway, totaling approximately 46 acres. Parcel WT10-25 was a densely vegetated area, covered with grasses and large areas of brush. As noted above, a drainage channel was located approximately 250 feet south of Highway 280. This dirt drainage ditch flowed in a westerly direction towards Estrella Parkway.

An irrigation channel located in the center of Parcel WT10-37 discharged into the drainage ditch described above. A dirt farm road was oriented in a north/south direction adjacent to the irrigation channel. A concrete lined irrigation channel was located on the south side of Broadway Road (a dirt farm road) that crosses Parcel WT10-37. Parcels 37 and 38 are agricultural land that were fallow or planted in barley or wheat during the site visit. A sanitary sewer manhole cover was observed in the center of Broadway Road, near the center of the 400 foot wide area.

A second concrete lined irrigation ditch was observed on the south side of Broadway Road. A US Sprint™ fiber optic route was located in Broadway Road, according to signage observed by Growth personnel. High transmission electric lines are located north of Broadway Road. However, no steel towers are located on the Site. Wooden telephone poles are located on the south side of Broadway Road.

An unnamed dirt farm road was located approximately 1,300 feet south of Broadway Road. The area north of the road was divided approximately in the center of the 400 foot wide area. The western portion of the Site was fallow and the east half appeared to be planted in a grain crop, either barley or wheat. An area approximately 30 feet wide north of the road on the east half of the Site was loose dirt. An area of mounded dirt was observed in the approximate center of the 400 foot wide area directly north of the dirt road. A concrete lined irrigation channel was observed on the south side of the road. South of the road was fallow agricultural land.

Another unnamed dirt road was located approximately 1,300 feet south of the dirt road described above at the northern boundary of WT10-38. This dirt road also was oriented east-west. High transmission lines and steel towers cross the Site from the southwest to the northeast. A tower was observed on the south side of the road near the western edge. A second tower was located approximately 250 feet south of the dirt road on the eastern portion of the Site. A concrete pad with what appeared to be anchor bolts at each corner was observed south of the transmission tower. A north-south oriented dirt road was located in the approximate center of the Site. This north-south road dead ends at a dirt drainage channel. The agricultural land was planted in barley or wheat.

WT10-34. WT10-34 consisted of a linear parcel where the dirt lined White Tanks Canal is located. An upper and lower dirt road are located on the north and south sides of the White Tanks Canal. Two steel transmission towers are located on the north side of the canal. Numerous discharge pipes are located in the sides of the canal banks. A well site is located on the south side of the canal near Estrella Parkway. The well site is surrounded

by a chain-link fence. A small amount of oily staining was observed near the well pump. A pole-mounted transformer was observed on the southeast corner of the well site. No evidence of leakage or staining was observed around the transformer. Growth personnel observed a natural gas pipeline on the south side of the canal.

WT10-40. WT10-40 is an approximate 32 acre parcel. The parcel is bounded by the White Tanks Canal on the north, then south 1000 feet into the Gila River floodplain. The parcel is bounded on the west by Estrella Parkway then east 1480 feet. The Buckeye Canal is located approximately 400 feet south of the northern boundary. The Buckeye Canal is a dirt canal which appears to flow to the east. The banks of the Buckeye Canal are loosely defined and are heavily vegetated with mesquite and salt cedar. The parcel was mostly covered in riparian vegetation at the time of Growth's site visit. Large sandy dunes are located on the north and south edges of the Buckeye canal and at times the canal does not appear to be visible. No structures or other development was observed on the site. Several dirt roads were observed along the northern border of the Site. Areas of dumping were observed near the dirt roads. Items observed among the dumping included wood debris, metal debris, household type trash, old bee hives and concrete debris. In one area of dumping located near the northeast corner of the Site, Growth personnel observed what appeared to be some pieces asbestos cement siding. Also observed in this area was a 55-gallon drum three-quarters full of what appeared to be a hard plastic resin. The resin was in a solid state at the time of Growth's site visit and some pieces of the resin were scattered about the site from damage caused by gun shots.

3.4 INFORMATION REPORTED BY USER REGARDING ENVIRONMENTAL LIENS OR SPECIALIZED KNOWLEDGE OR EXPERIENCE

A portion of the Site is located in the PGA Superfund Area. Growth sent environmental questionnaire forms to property owners or tenants. Copies of environmental questionnaires and accompanying attachments are provided in Appendix D. More detailed information obtained from interviews and questionnaires is provided in Section 4.3.

Information on recent cleanup activities in the PGA was provided by the City of Phoenix and is provided in Section 4.1.

3.5 CURRENT USES OF THE PROPERTY

The use of individual parcels of land within the Bullard Wash Outfall Study Area included agricultural, industrial, undeveloped floodplain, irrigation canals and drainage ditches, a portion of the Southern Pacific Railroad and its right of way, and a portion of State Route 85.

3.6 PAST USES OF THE PROPERTY

Based on Growth's review of site history, aerial photographs confirmed that portions of the Site have been developed since 1940, the earliest available photograph. The northwestern portion of the Site appears to have been agricultural since 1940. Agricultural development on the south side of State Route 80/85 appears to have occurred since 1949.

The runway at the PGA appears to have been expanded in the mid 1950s.

The land where the current Imsalco facility is located, appears to have been used as a borrow pit in the early 1940s. Aerial photographs show that military aircraft appear to have been stored on the northern half of the current Imsalco facility in the 1950s. Reclaimed Metals, an aluminum recycling facility, was located at this parcel between 1975 and 1986. A second aluminum facility, General Aluminum Corporation, may have been located at this site between 1963 and 1966.

More detailed descriptions of the parcels and their historical development are documented in Section 4.3.

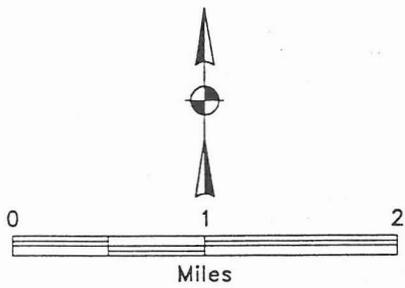
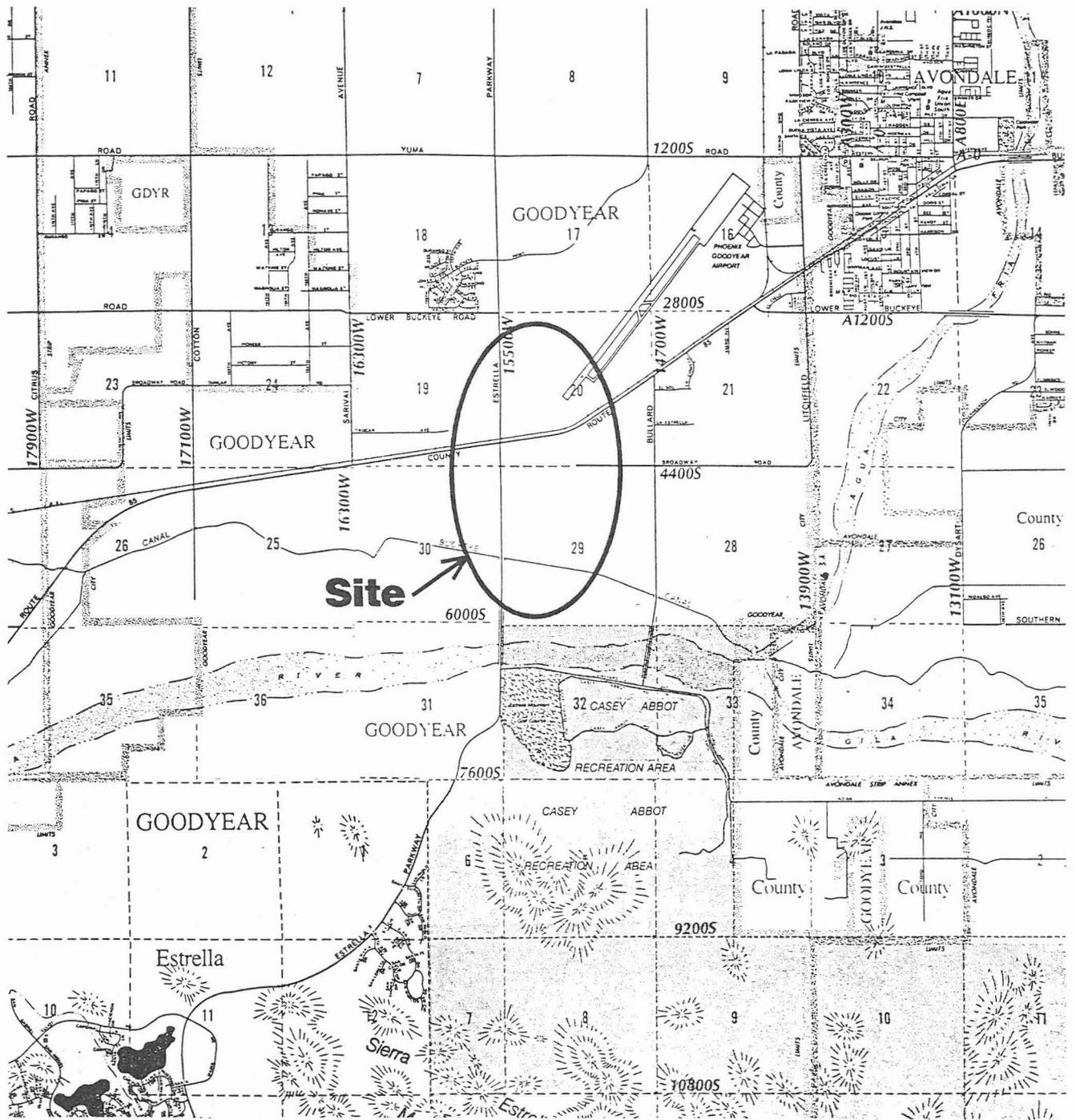
3.7 CURRENT AND PAST USES OF ADJOINING PROPERTIES

Historically, the area surrounding the Site was predominately agricultural land. The PGA began operation during World War II as the Litchfield Naval Air Facility. Its primary function was the maintenance of military aircraft. Goodyear Tire and Rubber Company also operated Goodyear Aerospace at the airport, where they repaired and modified airplanes, in conjunction with the adjoining Naval Air facility. The Navy transferred ownership of the airport to the City of Phoenix in 1968. Loral Systems Group, a division of Loral Corporation, purchased Goodyear Aerospace in 1987. The EPA placed the PGA on the National Priorities List in 1983 after trichloroethylene (TCE) was found in groundwater in the vicinity of the airport in 1981. TCE, an industrial solvent, was used in the aircraft maintenance operations. Goodyear Tire and Rubber started clean-up activities on the PGA in 1984 in cooperation with the EPA and state agencies. The activities of the cleanup investigation will be detailed in further sections of this report.

During Growth's site visit, the area surrounding the Site was observed to be primarily agricultural land. Saguaro Metals, a metal recycling facility, was located directly west of Imsalco. According to information obtained from city directories, Saguaro Metals appears to have been in operation since 1974.

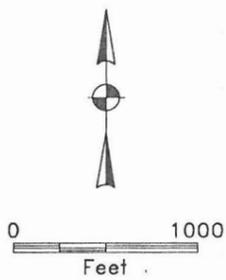
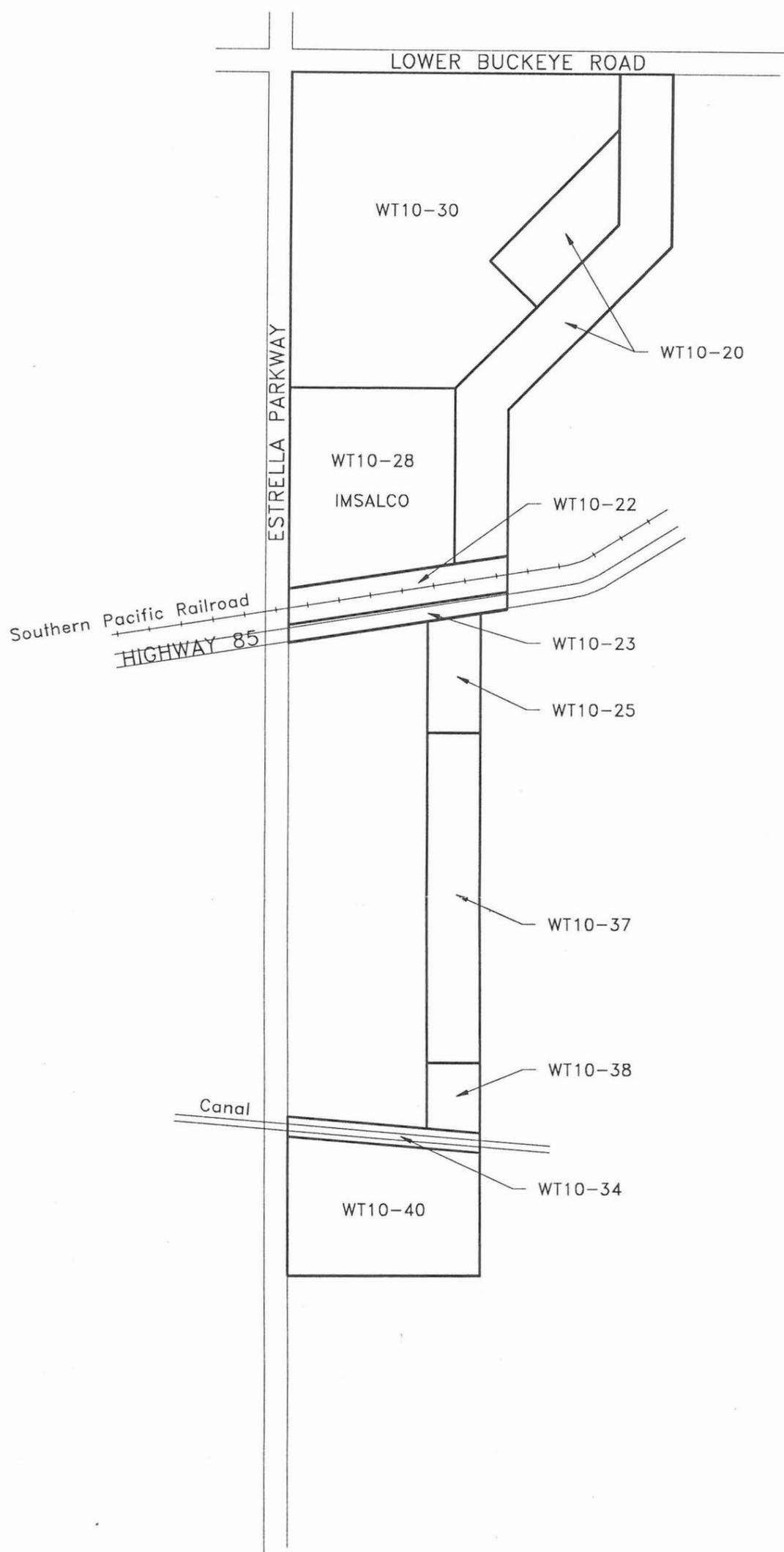
North of the Site was irrigated agricultural land. A City of Goodyear well also was observed north of the Site. East of the Site was the PGA runway, and airport facilities. Numerous monitoring and injection wells for the PGA Superfund cleanup are located east of the Site. South of the Site was agricultural land and the Gila River and its floodplain. West of the Site is agricultural land and a City of Goodyear Waste Water Treatment Plant.

A residential sub-division is under development northwest of the Site.



Growth
Growth Environmental Services, Inc.

DESCRIPTION	VICINITY MAP	FIGURE	PROJECT NUMBER
PROJECT LOCATION	ENVIRONMENTAL SITE ASSESSMENT BULLARD WASH MARICOPA COUNTY	FIGURE 1	AR390-1901
		PROJECT MANAGER	FILE NAME
		K. BERGSTEN	FCDMC\1901-00.DWG
		DRAWING DATE	DRAWN BY
		4/24/95	K. ANDREWS



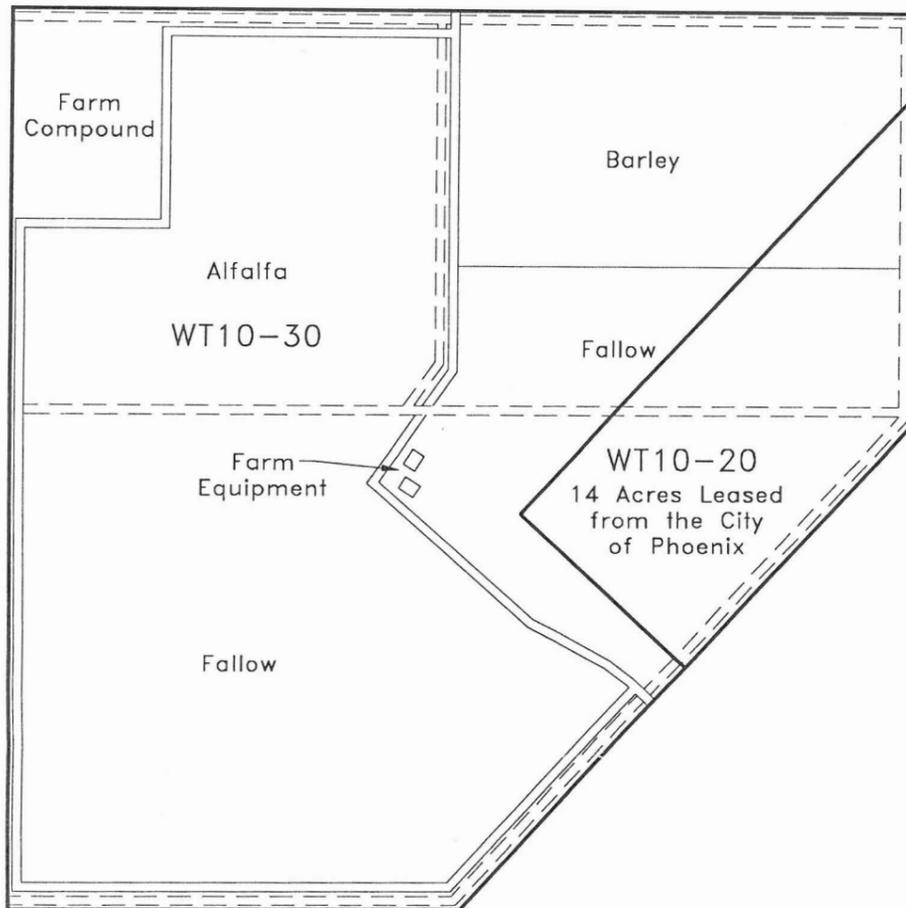
Growth
Growth Environmental Services, Inc.

DESCRIPTION	GENERAL SITE DIAGRAM	FIGURE	FIGURE 2	PROJECT NUMBER	AR390-1901
PROJECT/LOCATION	ENVIRONMENTAL SITE ASSESSMENT BULLARD WASH MARICOPA COUNTY	PROJECT MANAGER	K. BERGSTEN	FILE NAME	FCDMC\1901-01.DWG
		DRAWING DATE	MAR. 24, 1995	DRAWN BY	K. ANDREWS

Excavated UST's
(Not on Subject
Property)



Landscaping Debris,
Household Trash,
Wood Debris & Metal



LEGEND

- ==== Dirt Road
- ==== Irrigation Ditch



NOT TO SCALE



Growth
Growth Environmental Services, Inc.

DESCRIPTION
**SITE DIAGRAM
PARCEL WT10-20 AND WT10-30**

PROJECT/LOCATION
ENVIRONMENTAL SITE ASSESSMENT
BULLARD WASH
MARICOPA COUNTY

FIGURE
FIGURE 3

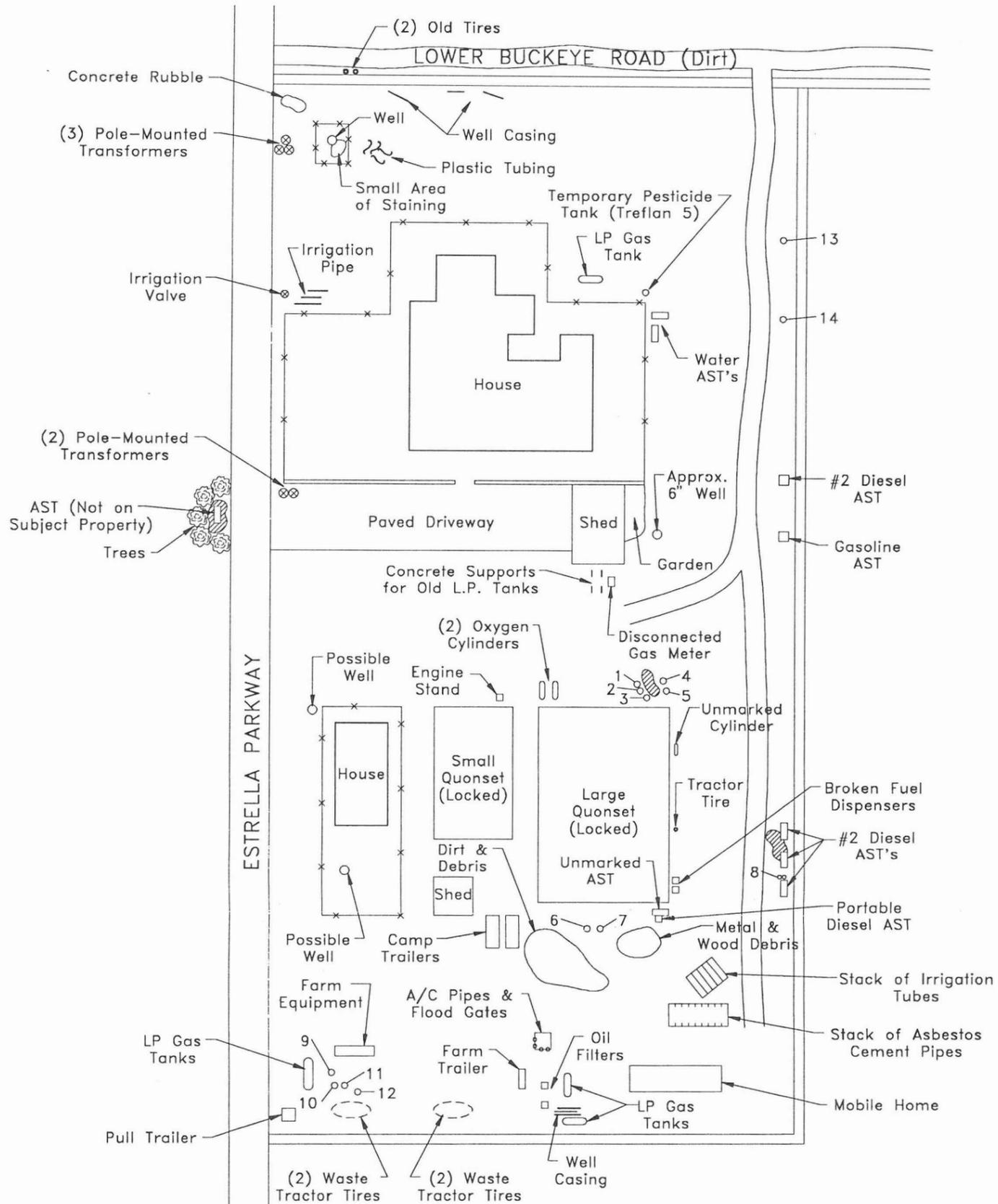
PROJECT MANAGER
C. ROWLEY

DRAWING DATE
MAR. 24, 1995

PROJECT NUMBER
AR390-1901

FILE NAME
FCDMC\1901-07.DWG

DRAWN BY
K. ANDREWS



DESCRIPTION OF DRUMS ON SITE

- 1 55-Gal. Drum of Drop Oil
- 2 55-Gal. of Transmission Fluid
- 3 55-Gal. Drum of Motor Oil
- 4 55-Gal. Drum of Trash
- 5 Empty 55-Gal. Drum
- 6 55-Gal. Drum of Scrap Metal
- 7 55-Gal. Drum of Scrap Metal
- 8 (2) 2-Gal. Drum of Oily Fluid
- 9 Empty 35-Gal. Drum
- 10 35-Gal. Drum of Oily Liquid
- 11 Full 55-Gal. Drum of Unknown Contents
- 12 5-Gal. Drum of Oily Liquid
- 13 55-Gal. Trash Barrel
- 14 55-Gal. Trash Barrel



NOT TO SCALE



GROWTH

Growth Environmental Services, Inc.

DESCRIPTION

SITE DIAGRAM
PARCEL WT10-30

PROJECT/LOCATION

ENVIRONMENTAL SITE ASSESSMENT
BULLARD WASH
MARICOPA COUNTY

FIGURE

FIGURE 4

PROJECT NUMBER

AR390-1901

PROJECT MANAGER

C. ROWLEY

FILE NAME

FCDMC\1901-04.DWG

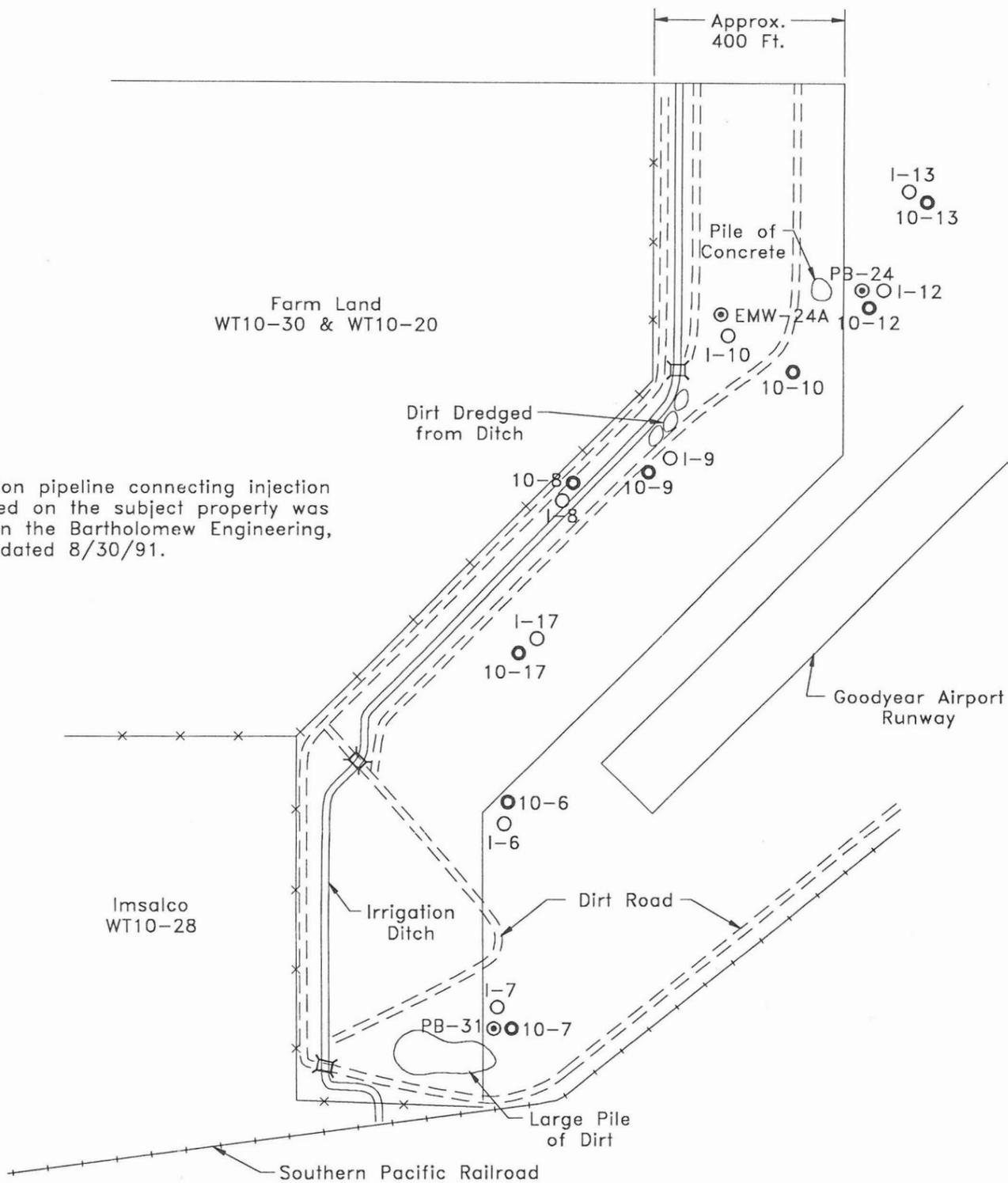
DRAWING DATE

MAR. 24, 1995

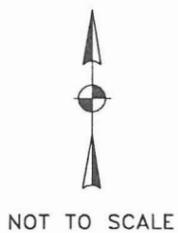
DRAWN BY

K. ANDREWS

NOTE: The irrigation pipeline connecting injection wells located on the subject property was observed on the Bartholomew Engineering, Inc. map, dated 8/30/91.



NOTE: Wells are either capped with metal lids or located in concrete vaults with steel lids.



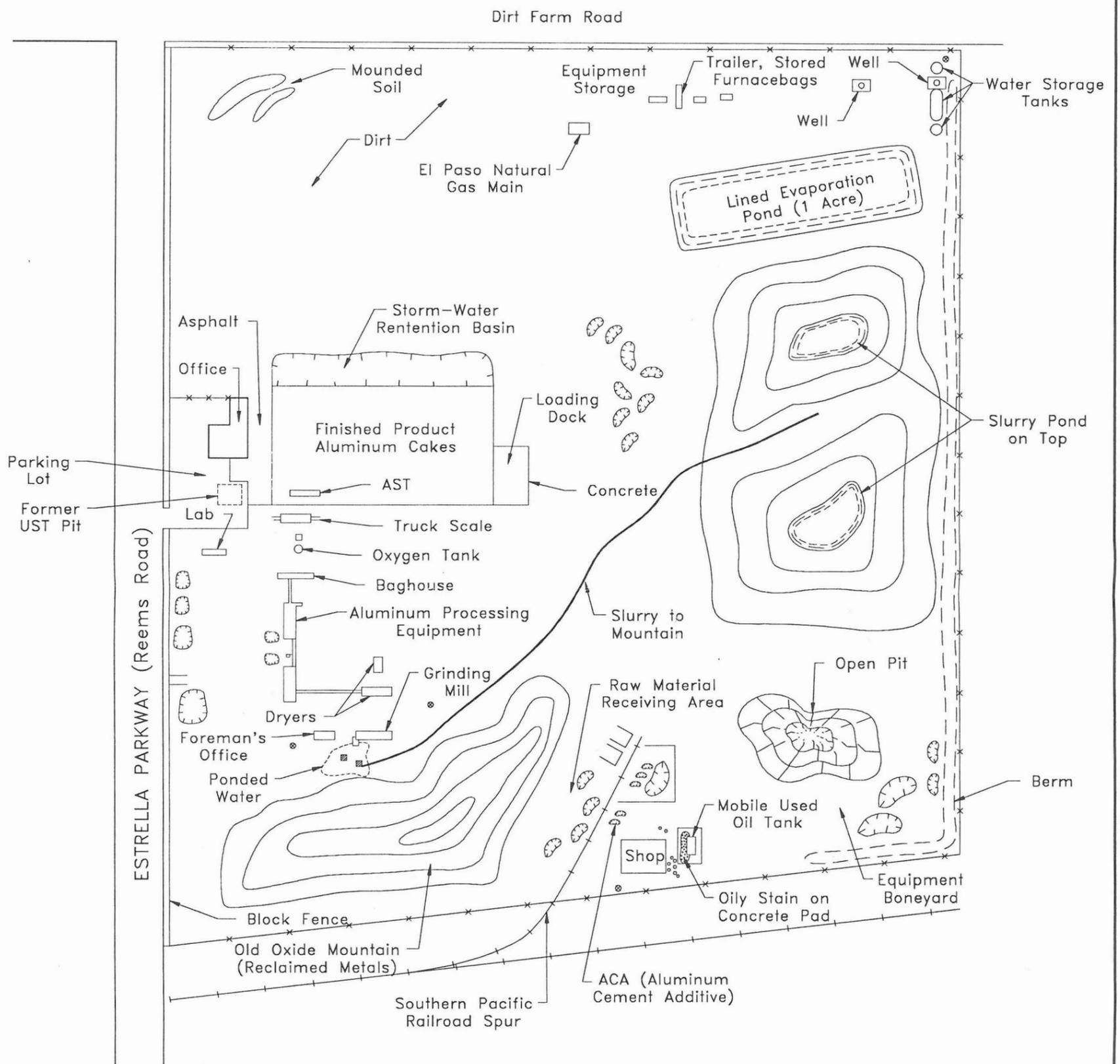
LEGEND

- Monitor Well
- ⊙ Completed Pilot Boring
- Injection Well
- ⌘ Culvert
- ==== Dirt Road



Growth
Growth Environmental Services, Inc.

DESCRIPTION	SITE DIAGRAM PARCEL WT10-20	FIGURE	FIGURE 5	PROJECT NUMBER	AR390-1901
PROJECT/LOCATION	ENVIRONMENTAL SITE ASSESSMENT BULLARD WASH MARICOPA COUNTY	PROJECT MANAGER	C. ROWLEY	FILE NAME	FCDMC\1901-08.DWG
		DRAWING DATE	MAR. 24, 1995	DRAWN BY	K. ANDREWS



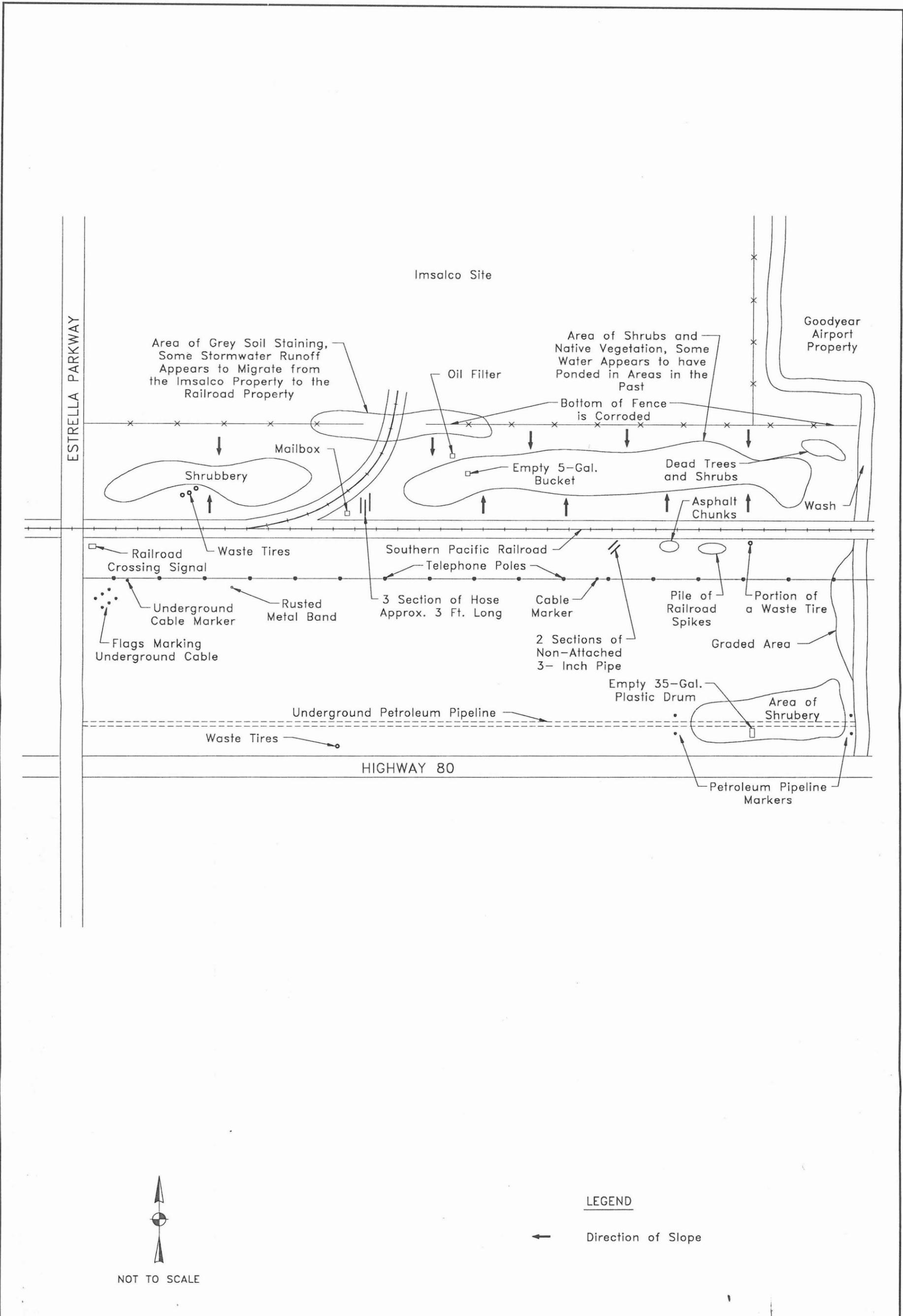
LEGEND

- ◊ Pole-Mounted Transformer
- ☪ Dross Pile (Black and White), Including Filings, Exothermic Fines
- ⋅⋅⋅ 55-Gal. Drums
- Sump Pump
- Slurry Pipeline
- x-x- Chain Link Fence


 NOT TO SCALE



DESCRIPTION SITE DIAGRAM PARCEL WT10-28	FIGURE	PROJECT NUMBER
	FIGURE 6	AR390-1901
PROJECT/LOCATION	PROJECT MANAGER	FILE NAME
ENVIRONMENTAL SITE ASSESSMENT BULLARD WASH MARICOPA COUNTY	K. BERGSTEN	FCDMC\1901-02.DWG
	DRAWING DATE	DRAWN BY
	MAR. 24, 1995	K. ANDREWS

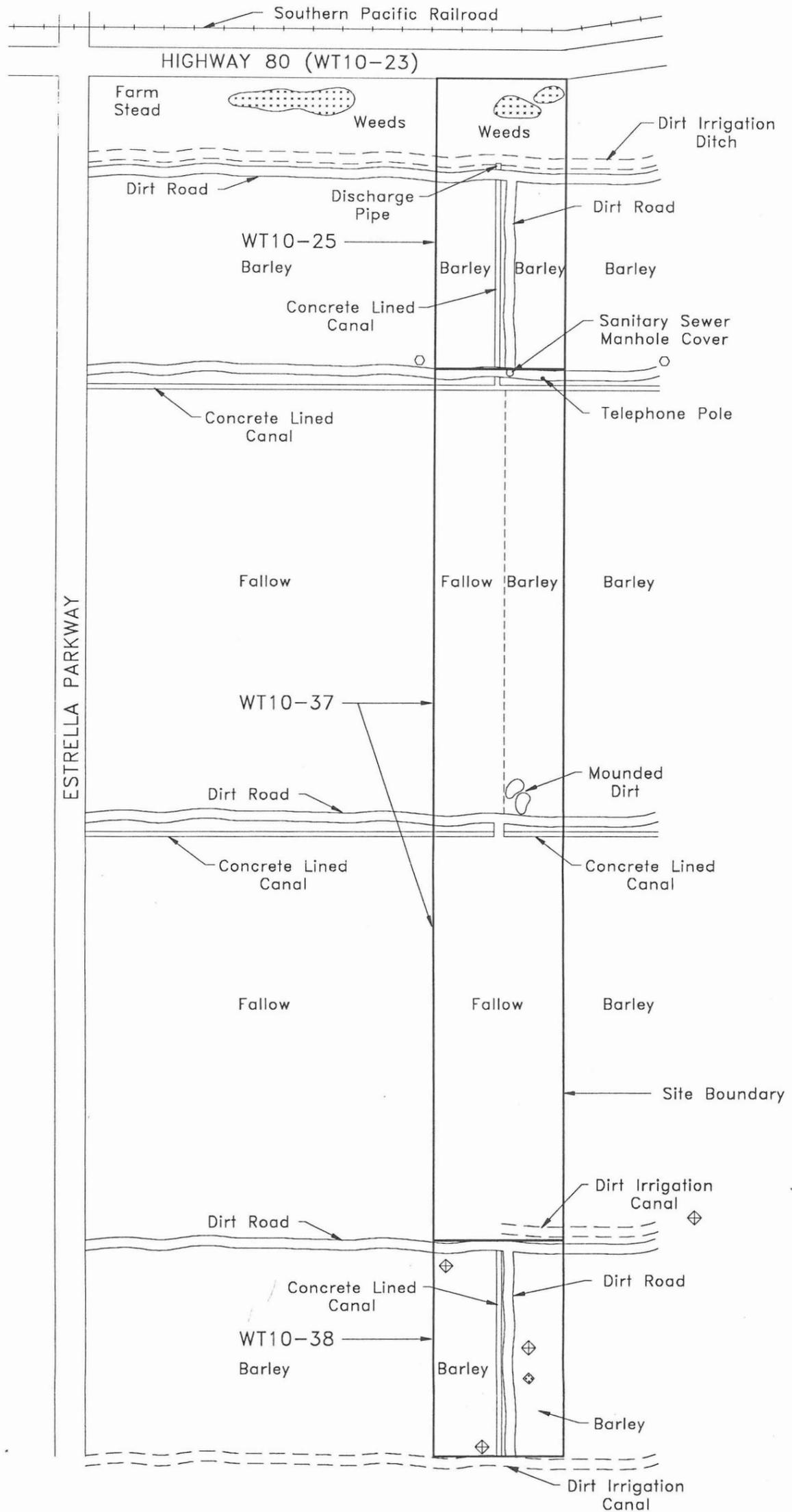


NOT TO SCALE

LEGEND

← Direction of Slope

 Growth Growth Environmental Services, Inc.	DESCRIPTION SITE DIAGRAM PARCEL WT10-22	FIGURE FIGURE 7	PROJECT NUMBER AR390-1901
	PROJECT/LOCATION ENVIRONMENTAL SITE ASSESSMENT BULLARD WASH MARICOPA COUNTY	PROJECT MANAGER C. ROWLEY	FILE NAME FCDMC\1901-05.DWG
		DRAWING DATE MAR. 24, 1995	



NOT TO SCALE

LEGEND

-  Brush Pile
-  High Tension Electric Pole
-  High Power Transmission Lines



GROWTH
Growth Environmental Services, Inc.

DESCRIPTION
**SITE DIAGRAM
PARCELS WT10-23,25,37,38**

PROJECT/LOCATION
ENVIRONMENTAL SITE ASSESSMENT
BULLARD WASH
MARICOPA COUNTY

FIGURE
FIGURE 8

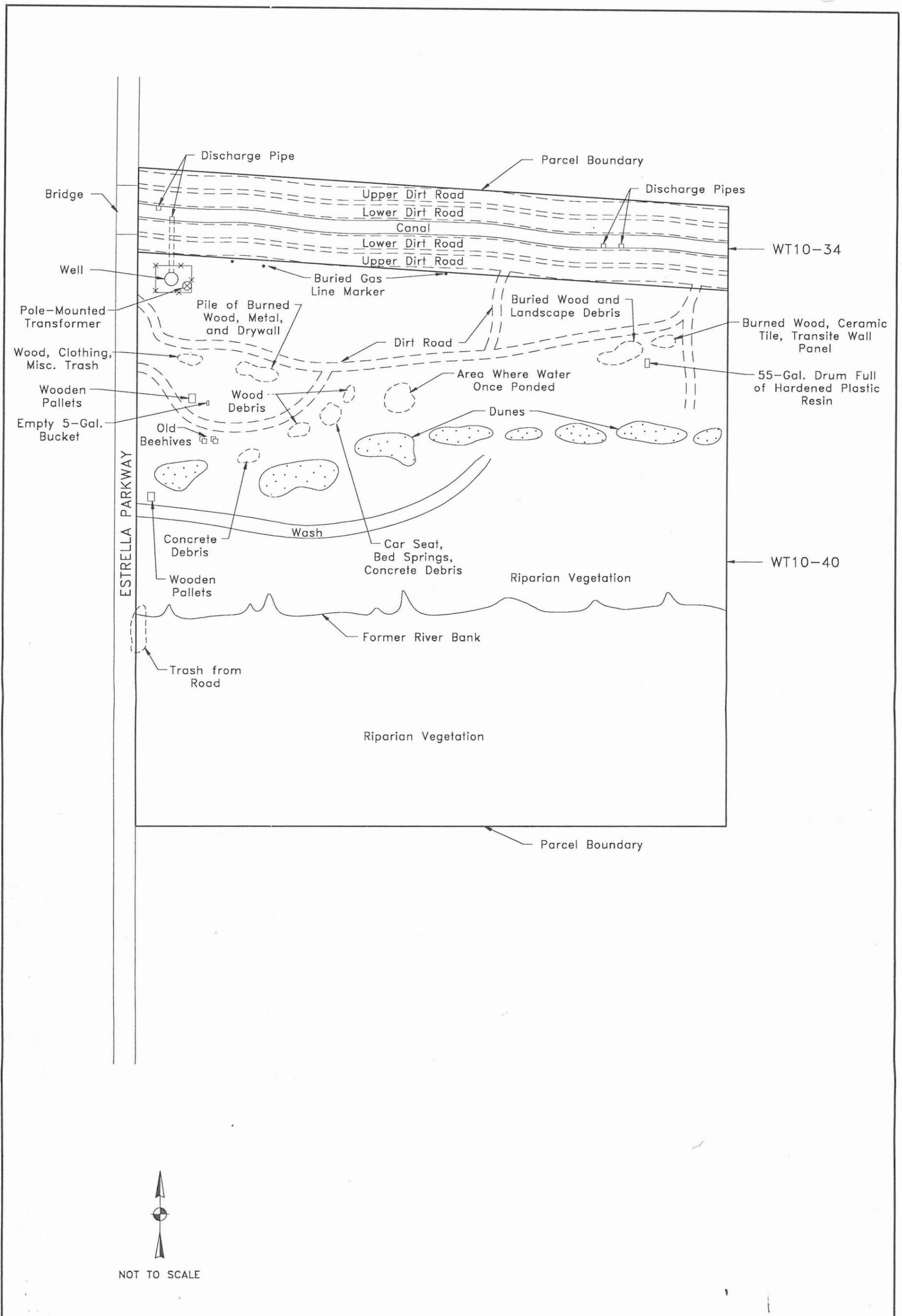
PROJECT MANAGER
K. BERGSTEN

DRAWING DATE
MAR. 24, 1995

PROJECT NUMBER
AR390-1901

FILE NAME
FCDMC\1901-03.DWG

DRAWN BY
K. ANDREWS



NOT TO SCALE



GROWTH

Growth Environmental Services, Inc.

DESCRIPTION

SITE DIAGRAM
WT10-34 AND WT10-40

PROJECT/LOCATION

ENVIRONMENTAL SITE ASSESSMENT
BULLARD WASH
MARICOPA COUNTY

FIGURE

FIGURE 9

PROJECT NUMBER

AR390-1901

PROJECT MANAGER

C. ROWLEY

FILE NAME

FCDMC\1901-06.DWG

DRAWING DATE

MAR. 24, 1995

DRAWN BY

K. ANDREWS

4 RECORDS REVIEW

4.1 STANDARD ENVIRONMENTAL RECORD SOURCES, FEDERAL AND STATE

Growth conducted a regulatory records review for the Site and the surrounding area. The records review included the following standard environmental record sources:

List	Approximate Minimum Search Distance (miles)
Federal NPL Site List	1.0
Federal CERCLIS List	0.5
Federal RCRA TSD Facility List	1.0
Federal RCRA Generator List	<i>property and adjoining properties</i>
Federal ERNS List	<i>property only</i>
ADEQ WQARF (State Superfund) List	1.0
Arizona CERCLA Information and Data System (ACIDS) List	1.0
ADEQ Open Landfills List	0.5
ADEQ Closed Landfills and Dumps List	0.5
ADEQ Registered UST List	<i>property and adjoining properties</i>
ADEQ Reported Leaking UST List	0.5

Federal Superfund Sites - Review of the EPA NPL of "Superfund" sites in Arizona indicated that the Site is located within a 1-mile minimum search distance of one Federal Superfund site (October 4, 1994). A portion of the Site is located within the boundaries of the southern portion of the PGA Superfund site and all of the Site is located within a mile of the PGA Area Superfund site. The southern portion of the PGA consists of the Loral Defense Systems Arizona property and the PGA property.

According to Growth's review of Superfund records, TCE is being used as the best chemical indicator of groundwater contamination in the PGA, although other contaminants are present in the groundwater. Although generally not covered under the Superfund project, more than 20 current and former underground storage tanks have been identified in the airport area. The EPA has proposed groundwater cleanup levels for four additional site contaminants including benzene, ethylbenzene, 1,1,2,2,2-tetrachloroethane, and tetrachloroethene (EPA, May 1991).

A shallow groundwater extraction treatment system has been in place at the PGA since 1989. In 1991, additional shallow groundwater and nine new deep groundwater monitor wells were installed. The shallow groundwater treatment plant treats about 700 gallons of contaminated water per minute. In addition, approximately 4,000 cubic yards of chromium and cadmium contaminated soil from former chromium sludge ponds on the east side of the airport were solidified and buried. The EPA expects soil remediation to continue at the airport until approximately 1998. The shallow groundwater extraction treatment system is expected to be in place for approximately 25 years and the deep groundwater cleanup to be completed in approximately 10 years (EPA, March 1993). More than 60 monitor wells are being sampled and analyzed on a regularly scheduled basis.

Detectable concentrations of metals, pesticides, and solvents have been found in shallow and near shallow sub-surface soils in the vicinity of the Site during on-going investigations by the EPA. The marshy area south of Highway 80 was used for as a test pit for metals, pesticides and solvents. The compound 2-butanone was found throughout the soil column in a soil boring collected by Ecology and Environment for the EPA in January 1985

(Soil boring 21-EP-3). Low levels of DDT and DDE were detected in surface and shallow sub-surface soils ranging from 0.09 to 0.22 mg/kg and 0.45 mg/kg to 0.86 mg/kg, respectively in the general area of WT10-20 at the southwest corner of the airport property. Low levels of chromium, arsenic, zinc, and lead have been detected in the marshy area. In addition, aluminum has been detected in soils at levels between 15,497 mg/kg in near surface soils to 8,236 mg/kg at 2 feet bgs.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) - The CERCLIS list is used to track activities or sites which have been reported to the EPA as candidates for investigation under the federal Superfund program. Review of the CERCLIS list, dated October 4, 1994, indicated that seven listed CERCLIS facilities may be located within a 0.5-mile minimum search distance of the Site. Specific information on these facilities is listed below:

EPA ID#	Facility Name	Facility Address	Approximate Location Relative to Site
AZD 98069590A	Litchfield Arpt Industrial Area	Phoenix-Litchfield Arpt Area	adjoins east edge of Site
AZD 072454036	Litchfield Aviation	16548 South Litchfield Road	1/2 mile east
AZD 980817761	Pacific Southwest Airlines Training Center	Phoenix-Litchfield Arpt	adjoins east edge of Site
AZD 980695902	Phoenix-Goodyear Airport Area	Between Lower Buckeye Road and Van Buren	a portion of Site and adjoins east edge of Site
AZD 068399039	Reclaimed Metals	1393 South Reems Road	portion of Site
AZD 981688005	Saguaro Metals	2201 South Reems Road	adjoining to the west
AZD 021648779	Sperry Flight Systems	Phoenix Litchfield Airport	a portion of Site and adjoins east edge of Site

Reclaimed Metals was a former occupant of Parcel WT10-28. Growth personnel contacted the EPA for CERCLIS information on Reclaimed Metals. A copy of the letter to EPA is provided in Appendix E. EPA provided a document entitled, "Recommendations for Further Action," submitted to the EPA by Ecology and Environment dated April 30, 1987. This information is also provided in Appendix E. According to the Ecology and Environment report, Reclaimed Metals Corporation leased the property at 1393 South Reems Road since 1973, from International Utilities, Inc. International Utilities, Inc. purchased the property in 1973 from a private party. Reclaimed Metals was an aluminum recycling facility. No further EPA action was recommended under CERCLA as no hazardous material have been disposed of on-site.

In addition, Growth contacted Arizona Department of Environmental Quality (ADEQ) to review file information on Reclaimed Metals. The CERCLIS file was not available to review at ADEQ (ADEQ, March 21, 1995). ADEQ did have information from two hazardous waste inspections on file for the Imsalco facility. This information was reviewed at ADEQ and a copy of the inspection reports are provided in Appendix F. Growth's review of the inspection reports is provided in the RCRA Compliance section of this report.

Growth personnel also reviewed a report prepared for ADEQ dated December 14, 1990 by Scott, Allard and Bohannon (SAB). The report stated that Reclaimed Metals was investigated due to its close proximity of contaminated wells at the PGA. SAB's report stated that the conduction of the EPA's Preliminary Assessment for Reclaimed Metals was that Reclaimed Metals did not use or generate hazardous waste and that aluminum

oxide fines were not a RCRA waste. Imsalco purchased the property in 1984. A brief site summary of the Ecology and Environment report dated April 30, 1987, indicated that Reclaimed Metals had leased the property since 1973 from International Utilities, Inc. From the early 1960s to 1973 the site was used by several different owners for business purposes similar to metal reclamation. Prior to the early 1960s the property was used to melt down old World War II planes.

An ADEQ internal memo dated August 15, 1988 indicated that down-gradient wells to the PGA were not designed to monitor the uppermost portion of the UAU. Wells down-gradient were of limited use in determining if there was an impact to groundwater from the Imsalco site. The SAB report dated December 14, 1990 states that groundwater in the general area of Imsalco generally flowed from the southeast to the northwest. Information obtained from the PGA Superfund investigation indicates that groundwater south of Yuma Road flows to the southwest.

RCRA Database - The RCRA database includes facilities that are involved in the generation, transport, treatment, storage, or disposal of hazardous waste and have been assigned an EPA identification number. Inclusion of a facility on this list does not necessarily mean that the site is contaminated or causing contamination. Review of the RCRA database dated November 29, 1994, indicated no registered RCRA treatment, storage or disposal facilities within a 1.0-mile minimum search distance. One RCRA generator facility is located on the adjoining property. Specific information on the RCRA facility is provided below:

EPA ID#	Facility	Address	Generator Type	Approximate Location Relative to Site
AZD 072454036	Phoenix Goodyear Airport	1658 South Litchfield Road	small quantity generator	adjoins east edge of Site

EPA RCRA Violators Listing - The EPA Resource Conservation and Recovery Information System (RCRIS) serves to track the status of registrations, permits, reports, inspections, enforcement activities and financial data of those regulated under RCRA. The RCRIS database lists facilities which have been reported to be in violation of RCRA hazardous waste regulations. A review of the RCRIS database indicated no listed facilities within 0.5-miles of the Site (RCRIS, November 29, 1994). Two general inspection reports and subsequent follow-up documentation by Imsalco's consultant were reviewed at ADEQ.

The generator inspection dated April 26, 1988, revealed that settling ponds on the Imsalco site had overflowed into Reems Road on several occasions. The operations manager for Imsalco at the time of ADEQ's site inspection stated that the previous owner had buried material in the southeast corner of the property. Imsalco was excavating the material and hoped to donate it to a fire department for training purposes. No information was available in the file on the nature of the buried material.

The inspection report indicated that bag house dust was recycled through the furnace and waste from the furnace was stockpiled on the northeast portion of the property. Two septic systems, two water wells, three settling ponds for mill water, two 5,000 gallon diesel fuel USTs, a 250 gallon used oil AST, parts cleaner (Safety Kleen), 55 gallon drums, bag house dust, and furnace rocks were observed by ADEQ to be at the Imsalco facility. The furnace rocks were used in concrete on the site. ADEQ collected six samples from shallow surface soils. Total lead ranged from 207 parts per million (ppm) to 734 ppm at the northwest corner of the parcel. Total cadmium was also above laboratory detection limits in two samples collected and analyzed from near the northwest corner of the parcel. None of the samples exceeded EP Toxicity characteristic limits (EP TOX) for hazardous waste threshold levels for lead and cadmium. One sample collected and analyzed from impoundment sludge near the mill outfall exceeded the hazardous waste threshold for EP TOX Lead.

A second hazardous waste inspection was conducted by ADEQ on April 10, 1990 at Imsalco. According to the plant manager, the Imsalco plant was originally constructed to handle dross generated by the former Reynolds Aluminum plant. This meeting outlined the dross conversion or recycling process that Imsalco provides. Incoming dross is weighed and stored separately. The dross must have 8 to 10 percent aluminum to be recycled. As the dross readily oxidizes, it is generally processed within 30 days. Two types of dross are accepted. White dross is from the primary aluminum industry where no flux is utilized and generally has a higher aluminum content. The black dross is from secondary aluminum industries where flux is used in the process.

Dross is sent to a crusher then to a wet mill. The wet mill washes off the salts and oxides from the dross. Three by-products are obtained from the wet mill: 1) aluminum fines, 2) tailings or aluminum oxide, and 3) flux (salt and potash). The slurry from the wet mill is pumped to the top of the tailings pile (two mountains observed by Growth on site). The water evaporates or percolates through the tailings piles. A lined evaporation pond was being experimented to evaporate the salts in order to use the tailings as aluminum cement additive (ACA).

Crushed material is sent to the furnace which produces three by-products: 1) aluminum, 2) dross or skims, and 3) bag house dust. The dross is recycled through the process. Bag house dust is collected in a hopper and mixed with salt to be reused as flux in the furnace.

The operations manager indicated to ADEQ that wet dross can burn up and that Imsalco do longer recycled sweat furnace dross due to on-going State involvement in Tucson. The operations manager noted that the old west impoundment sampled by ADEQ in 1988 had been used by the prior owner of the property as part of an air pollution control system and been removed. Although the ADEQ samples are noted to have been non-hazardous in the 1990 report, information in the 1988 report indicated that a sample collected from the sludge in the mill impoundment area exceeded EP TOX Lead.

Subsequent reports to ADEQ by Imsalco's consultant, SAB documented sampling of materials to be sold as ACA. A note in the 1992 report by ADEQ stated that the document did not discuss testing of old material accumulated since the 1940s.

A letter from ADEQ to Imsalco dated January 1, 1994 stated that no further actions for the April 26, 1988 and April 10, 1990 hazardous waste inspections would be undertaken at this time. The letter stated that the ADEQ letter was not to be construed as compliance only that conditions referenced in the inspections had been correction. Imsalco may be in violation of other requirements of the Arizona Hazardous Waste Management Act.

ERNS - The ERNS stores information on releases of oil and hazardous substances. Releases are recorded in ERNS when they are initially reported to the federal government by any party. A review of the ERNS database, dated July 29, 1994, indicated that two incidents that may be located on the Site were listed. Specific information on the ERNS incidents is listed below:

Case No.	PRP Name	Site Address	Material Released	Approximate Location Relative to Site
93323035	Goodyear Tire and Rubber	1658 South Litchfield Road	500 gallons - sulfuric acid	adjoins east edge of Site
93322418	Unknown	Goodyear Airport, SE Goodyear	blue acid smelling cloud	unknown, east of Site

Water Quality Assurance Revolving Fund (WQARF) - Review of the ADEQ project list for the WQARF indicates that the Site is not located within a 1.0-mile minimum search distance of any WQARF sites or study areas.

Arizona CERCLA Information and Data System (ACIDS) - The ADEQ list entitled ACIDS lists sites which have been reported to or are being investigated by ADEQ as having possible contamination. Six ACIDS sites are located within a 1.0-mile minimum search distance of the Site.

Acids ID #	EPA ID #	Facility	Address	Status	Approximate Location Relative to Site
0236	AZD 980817761	Pacific Southwest Airlines Training Ctr.	Phoenix-Litchfield Airport	No PA Date	adjoins east edge of Site
0184	AZD 980695902	Phoenix Goodyear Airport Area	Between Lwr Buckeye & Van Buren	No PA Date	a portion of Site and adjoins east edge of Site
0453	AZD 068399039	Reclaimed Metals	1393 South Reems Road	No PA Date	Site
0185	AZD 072454036	Litchfield Aviation	16548 South Litchfield Road	No PA Date	1/2 mile east
0030	AZD 981688005	Saguaro Metals	2201 South Reems Road	No PA Date	adjoining property to the west
0280	AZD 021648779	Sperry Flight Systems	Phoenix Litchfield Airport	No PA Date	adjoins east edge of Site

ADEQ Open Landfills List/ADEQ Closed Landfills and Dumps List - Review of the ADEQ Open Landfills List and Closed Landfills and Dumps list indicates that no reported landfills or dumps are located within a 0.5-mile minimum search distance of the Site.

Underground Storage Tanks (USTs) - According to the ADEQ list of registered USTs, five registered UST facilities are located within a 0.5-mile minimum search distance of the Site. Specific information on the UST facilities is listed in the following table:

ADEQ ID#	Facility Name and Address	Approximate Location Relative to Site
0-005903	Honeywell, Inc./Hangar 52, Phoenix Litchfield Airport	adjoins east edge of Site
0-002572	International Mill Service (Imسالco), 1393 South Reems Road	portion of Site (Parcel WT10-28)
0-003894	Phoenix Goodyear Municipal Airport/550 South Litchfield Road/ 1658 South Litchfield Road	adjoins east edge of Site
8-007801	Phoenix Goodyear Municipal Airport/Phoenix Goodyear Airport	a portion of Site or adjoins east edge of Site
0-003981	PGA/Airline Training Center/Phoenix Litchfield Municipal Airport	adjoins east edge of Site

Leaking Underground Storage Tanks (LUSTs) - Review of the ADEQ list of LUSTs indicates that nine reported LUST incidents have occurred within a 0.5-mile minimum search distance of the Site. Specific information on the LUST incidents is listed in the following table:

ADEQ ID#	Facility Name and Address	Notification Date/Status	Approximate Location Relative to Site
0002572*4715.3271	International Mill Service/1393 South Reems Road	11-24-92 Open	Portion of Site (Parcel WT10-28)
0003894*4715.0313	Phoenix Goodyear Municipal/550 South Litchfield/1658 South Litchfield	05-29-87 Open	adjoins east edge of Site*
0003894*4715.0953	Phoenix Goodyear Municipal/550 South Litchfield/1658 South Litchfield	11-07-89 Closed 01-06-92	adjoins east edge of Site*
0003894*4715.1000	Phoenix Goodyear Municipal/550 South Litchfield/1658 South Litchfield	11-07-89 Closed 01-06-92	adjoins east edge of Site*
0003894*4715.1157.	Phoenix Goodyear Municipal/550 South Litchfield/1658 South Litchfield	03-20-90 Open	adjoins east edge of Site*
0003894*4715.1247	Phoenix Goodyear Municipal/550 South Litchfield/1658 South Litchfield	05-01-90 Open	adjoins east edge of Site*
0003894*4715.3356	Phoenix Goodyear Municipal/550 South Litchfield/1658 South Litchfield	02-11-94 Open	adjoins east edge of Site
0003894*4715.3547	Phoenix Goodyear Municipal/550 South Litchfield/1658 South Litchfield	06-09-94 Open	adjoins east edge of Site*
8007801*4715.0537	Phoenix Goodyear Municipal Airport/Phoenix Goodyear Airport	10-04-88 Open	a portion of Site or adjoins east edge of Site*

* Facilities with distinct property addresses have been listed with the approximate distance from the Site. Facilities with no address are listed as being a portion of the Site or adjacent to the Site.

Growth personnel reviewed the ADEQ LUST file for the International Mill Service (Imsalco) facility. According to the file, two 5,000 gallon steel diesel USTs were removed from an area southeast of the plant office on December 28, 1993. The consultant's report prepared by SAB indicated that several holes were observed in both tanks when they were removed from the tank pit. Petroleum contaminated soil (PCS) and some soil staining was observed in the bottom of the tank pit. Excavated soil was stockpiled on plastic on the facility. Soil samples collected from the ends of the tanks approximately 10 feet bgs indicated TPH above State Suggested Cleanup Levels (SSCLs). Additional sampling was performed by SAB on December 30, 1993 as a follow up investigation to determine the vertical extent of TPH contamination. Five soil borings were drilled using a hollow stem auger, approximately 4 to 5 feet from the center of each sidewall (to a depth of 20 feet bgs) and in the center of the tank pit (to a depth of 40 feet bgs). Laboratory analysis indicated no detectable TPH in the sidewall borings below 10 feet. The center soil boring revealed TPH levels at 9,200 mg/kg at 15 feet bgs and 3,800 mg/kg at 20 feet bgs. No TPH above laboratory detection limits was detected between 25 and 40 feet bgs. SAB concluded that TPH contamination had not reached groundwater but was localized in the soil between 20 and 25 feet bgs.

In January 1994, the excavation was extended to remove the PCS. The highest concentrations of PCS was removed from the center of the pit between 20 and 21.5 feet bgs. At 23 feet and 26 feet bgs, TPH was below SSCLs at 28 mg/kg. Approximately 430 tons of petroleum contaminated soil was disposed of at Waste Management's Butterfield facility between March 16 and March 21, 1994. ADEQs most recent Case Evaluation of the LUST incident indicated that the extent of contamination appears to remain undefined and the LUST incident remains open. Groundwater in the vicinity of Imsalco is encountered at approximately 30 feet bgs.

4.2 PHYSICAL SETTING SOURCES

Growth reviewed the USGS topographic map for the Perryville Quadrangle, dated 1957 and photo revised in 1982, to evaluate the physical setting of the Site. This review indicated that the Site was located in a relatively undeveloped area of Maricopa County, Arizona. Parcel WT-10-30 appears to be undeveloped land. Off-Site, three structures were visible on the Northwest Quarter of the Northwest Quarter of the Northwest Quarter of the Northwest Quarter of Section 20, west of Parcel WT10-30.

Phoenix-Litchfield Municipal Airport (now known as the PGA) is shown as a portion of the Southeast Quarter of the Northeast Quarter, the Northeast Quarter of the Southwest Quarter, and the Northeast Quarter of Section 20 (Parcel WT-10-20). Bullard Wash was illustrated as flowing south from a reservoir located approximately 0.5 miles north of the Site. This drainage channel follows the center section line of Section 20, and then parallels the runway at Phoenix-Litchfield Municipal Airport. The drainage channel then follows the eastern property boundary of Imsalco before turning eastward parallel to the north side of the Southern Pacific Railroad (Parcel WT10-22).

A pipeline was depicted crossing the current Imsalco facility in a relatively westerly to easterly direction. A well was illustrated as being located at the northeast corner of the Imsalco facility (Parcel WT-10-28). A depression which covers an area approximately three acres in size was pictured near the southwest corner of the Imsalco facility. A structure was visible east of the depression. South of the Southern Pacific Railroad was Highway 80/85 (Parcel WT10-23).

A brushy area was depicted on the south side of the highway (Parcel WT10-25). A dirt road which corresponds to Broadway Road was depicted at the section line between Section 20 and Section 29. A series of poles were regularly spaced along Broadway Road.

Parcels WT10-25, 31, and 38 consist of undeveloped land. High power transmission lines were illustrated as crossing WT10-38 in a southwestern to northeastern direction. The Buckeye Canal (Parcel WT10-34) was located in a portion of the Southwest Quarter of Section 29. Adjacent to Reems Road (now Estrella Parkway) and directly south of the Buckeye Canal, a well was visible. An area of hills and valleys and a ephemeral stream channel were illustrated directly south of the Buckeye Canal (WT-10-40). The Gila River and its floodplain were depicted directly south of the Site.

4.3 HISTORICAL USE INFORMATION

Growth reviewed reasonably ascertainable standard historical sources in an attempt to develop a history of the previous uses or occupancies of the Site and surrounding area. The objective was to identify those uses or occupancies that are likely to have led to recognized environmental conditions in connection with the Site. Growth identified uses or occupancies for the majority of the Site dating from the present back to 1940. Aerial photographs were available for the majority of the Site back to 1940. These sources and findings are summarized in the sections to follow.

Historical Aerial Photographs

Growth reviewed available aerial photographs of the Site and adjacent areas which were available from Rupp Aerial Photography. The photo sequence begins in 1940. Aerial photographs were not available in 5-year intervals. However, the aerial sequence appeared to capture various periods of development on the different portions of the Site. A copy of selected aerial photographs has been provided in Appendix I.

WT-10-30

- 09-13-40 This approximate 160 acre parcel was a mixture of active and fallow irrigated agricultural land. A farm compound was located at the southeast corner of Lower Buckeye and Reems Road (Estrella Parkway). The main residence appeared visible as well as several outbuildings and farm equipment. Off-site, a farm compound appeared to be located at the southwest corner of Lower Buckeye and Reems Road.
- 02-20-49 This approximate 160 acre parcel was a mixture of active and fallow agricultural land. A large and small Quonset hut were visible near the southeast corner of the farm compound. An irrigation canal flows south from Lower Buckeye Road across the parcel in an irregular pattern. Off-site, a second farm compound was visible on the west side of Reems Road at the southwest corner of Lower Buckeye and Reems Roads.
- 01-03-58 The farm compound on-site has been expanded. The runway on the adjoining property has been extended to its current length. The agricultural portion of the parcel appeared to be primarily fallow at this time. Off-site, a structure that may be a trailer or a very large piece of farm equipment, appeared to be located along a dirt road at the quarter section line north of the property. Smaller pieces of farm equipment appear to be visible.
- 01-21-64 The farm compound appeared relatively unchanged except that a windbreak appeared to have been established along the southern boundary of the compound. The agricultural land appeared to be fallow. Furrows were visible on the northwest portion of the property. The structure and farm equipment north of the parcel remained visible.
- 01-26-70 The parcel appeared relatively unchanged. Farm equipment appeared to be parked along the dirt road at the northern boundary. Off-site, the structure located along the dirt road at the quarter section line north of the parcel was no longer visible. The area, however, appeared to contain unidentified mounded material.
- 02-25-80 The farmstead appeared to be the same. Crops in various stages of development of remainder were located on the remainder of the parcel. The unidentified material remained visible on the property north of the parcel.
- 04-10-84 The farm compound appeared to be larger and a mobile home was visible near the southeast corner of the compound. The farm compound appeared as it did during the site visit. Agricultural fields were in various stages of preparation for planting.
- 01-15-86 The farm compound appeared as it did during the site visit. Furrows were visible on the west half of the parcel. However, no vegetation was evident. The east half of the parcel appeared as if it had been recently leveled. An area of unidentified debris was visible on the property to the north adjacent to the adjoining farm road.

02-15-94 The layout of the farm compound structure at the northwest corner appeared as it did during the site visit. The northwest portion of the agricultural land was planted in row crops. The balance of the site appeared to be fallow and recently graded. Two fuel USTs appear to have been disposed of on the adjoining property to the north. These former USTs were observed during the site visit.

WT-10-20

09-13-40 An irregularly shaped 14-acre portion of WT-10-20 was agricultural land. The 400 foot strip within the current PGA property was native desert. Bullard Wash appears to be a large braided drainage channel that flowed in a southerly direction under the Southern Pacific Railroad, then turned in a southwesterly direction on the south side of Highway 85. This drainage appears to eventually flow into the Gila River approximately 2 miles west of the Site. No runway was visible on the PGA.

02-20-49 A portion of WT-10-20 was agricultural land. A dirt road was located along the western edge of the parcel. The runway for the PGA was visible, although it does not appear to be as long as it is currently. Two ponds were visible northwest of the northeast corner of the current Imsalco site on the east and west side of the drainage channel. The drainage visible on the 1940 aerial photograph appeared to have been channeled to flow north-south at the west end of the runway, and under the Southern Pacific Railroad. Numerous planes were visible along Yuma Road and Highway 80/85 east of Bullard Avenue. Off-site, a second drainage channel parallels the south side of the airport and drains into the drainage channel that flowed off-site to the west.

01-03-58 The airport runway has been expanded to the southwest. Numerous airplanes of various sizes were parked in lines along the northern edge of the runway. The paved and unpaved areas south of the runway were covered with parked airplanes. The ponds visible in the 1949 aerial photo were no longer visible and the drainage channel has been rerouted along the current western airport boundary.

01-21-64 The 14-acre parcel appeared to remain part of the adjoining agricultural land. No boundaries were visible to delineate the parcel. Three rows of airplanes were visible south of Lower Buckeye Road in the area of the 400 foot segment of land. The rows of aircraft continue along the western boundary of the airport adjacent to the drainage ditch. Numerous rows of various size aircraft were parked on the south side of the runway.

01-26-70 The agricultural portion of the parcel remained relatively unchanged. The area north and south of the runway appeared to have been balded. No planes were visible at the airport property except for two small planes on the runway. At the southwest corner of the airport property, a row of unidentified parts or containers were observed on the dirt.

02-25-80 The irregularly shaped 14-acre parcel was planted in row crops. The airport was relatively unchanged from the 1970 aerial photograph. The unidentified material was no longer visible at the southwest corner of the airport. A dirt road was observed near the southwest portion of the airport southwest of the runway.

04-10-84 The 14-acre parcel was planted agricultural land. A small dirt mound was visible the southwest corner of the PGA. The drainage ditch remains visible along the western boundary of the airport. Many dirt roads were located along the western portion of the airport.

01-16-86 The farm portion of the parcel was fallow, leveled land. The airport portion of the parcel appeared relatively unchanged from the 1984 aerial photograph.

02-15-94 The agricultural portion of parcel was fallow and recently leveled. Evenly spaced shrubs were visible along portions of the drainage ditch. An unidentified area that appeared to be a wastewater pond was visible approximately 400 feet east of the western edge of the airport. A large mound of soil was visible near the southwest corner of the airport. A dirt road was visible along the perimeter of the mound. Numerous other dirt trails were visible near the western edge of the airport property.

WT-10-28

09-13-40 A fenced compound was visible north of the railroad near the intersection of Reems Road and Highway 85. The fenced compound appeared to occupy approximately five acres of land. A borrow pit appeared to be located in the fenced area. The balance of the 40-acre parcel was native desert.

02-20-49 The fenced compound appeared to have been expanded to encompass approximately 10 acres. A parallelogram-shaped large pile was visible in the fenced compound. A linear object that appeared to be a chute was located at the northeast and southwest corner of the pile. An unidentified irregular shaped area was visible north of the pile. Two dirt trails were visible near the northern edge of the forty acre parcel. A dirt trail was visible along the southern edge of the parcel that turns north east of the parcel and ends at the pond visible on parcel WT-10-20. The balance of the 40-acre parcel was native desert.

01-03-58 The northern portion of the parcel was planted in row crops south to the fenced enclosure. The area appeared to be a burrow pit. The dirt trails visible in the 1949 aerial photograph were no longer visible. The southeast portion of the site was vacant graded land. An irrigation canal was visible along the eastern edge of the parcel. A well pump appeared to be visible at the northeast corner of the parcel.

01-21-64 The northern third of the parcel was covered with aircraft and what appeared to be aircraft parts. Some areas of equipment storage appeared to be located in the top central portion of the parcel. The fenced area at the southwest corner of the parcel appears to contain numerous piles and equipment. The area inside the fenced enclosure appears to be relatively flat. A rail spur was located directly south of the site but does not appear to enter the parcel. A structure was located near the southern boundary and a fenced enclosure was located east of the structure. Several areas of equipment storage were located around the perimeter of the structure and inside the fenced enclosure.

01-26-70 The northern third of the parcel was vacant land vegetated with small shrubs. The aircraft visible in the 1964 aerial photograph were not visible. A structure was located at the extreme northwest corner of the parcel. A dirt road was visible from the structure to the area of the well located at the northeast corner of the parcel. Several dirt roads extended south from the area of the structure. A fenced enclosure was visible along the eastern edge of the parcel, in the area where equipment was stored in the 1964 aerial photograph. This fenced enclosure appears to contains areas of metal and other parts and equipment. The fenced enclosure visible east of the maintenance building was still visible in the 1970 aerial photograph. A small amount of equipment was visible inside the enclosure and directly north of the enclosure. The fenced area observed in earlier aerial photographs near the southwest corner of the parcel was no longer visible. The area appears to have been graded and vegetation was visible. An area where structures or equipment was located was visible north of where the fence formerly was located. Numerous dirt trails cross the parcel.

01-13-79 A large area of disturbed soil or mounded material appeared visible in the southwest corner of the parcel. Two structures were visible along the western boundary of the parcel. A third building was located along the southern boundary of the parcel. Equipment appeared to be scattered on the southwest portion of the parcel north of the area of disturbed soil. Two areas of equipment storage

appear to be visible. One was located in the extreme northwest corner of the parcel, where a structure was observed in 1970. The second area was located along the eastern edge of the parcel, in the fenced equipment storage area observed in the 1970 aerial photograph. An airplane was visible in the extreme southeast corner of the parcel. West of the airplane was a fenced area located along the southern border of the parcel. The fenced storage area appeared to be empty. The balance of the parcel appeared to be vacant with a few dirt roads visible.

- 02-25-80 Activity on the site appeared to remain limited to the southwest portion of the parcel. Several structures and equipment were visible. The airplane was no longer visible in the southeast corner of the parcel.
- 04-10-84 A large pile of what appeared to be aluminum fines was visible near the southwest portion of the parcel. Equipment appeared to be clustered in the southwest quadrant north of the large pile. The maintenance building was located east of the large pile. Several small piles were visible northeast of the equipment. A dirt road crosses the parcel from the large pile to the northeast corner and along the northern boundary of the parcel.
- 01-16-86 The evaporation pond and pit were not visible on the southeast portion of the site. Not as much equipment appeared to be located on the parcel. The piles of aluminum fines appeared to be smaller.
- 02-15-94 Site appeared generally as it appeared during the site visit. The evaporation pond and pit from a previous 1993 breach in the aluminum fines pile on the southeast corner of the Site appeared to be visible. The old aluminum fines pile on the southwest corner appeared larger than it did during Growth's site visit. The location of equipment appeared relatively unchanged from the site visit.

WT-10-22

- 09-13-40 The Southern Pacific Railroad was visible. No spur was visible at the Imsalco facility.
- 01-03-58 The parcel appeared relatively unchanged.
- 01-21-64 The Southern Pacific Railroad was visible. A small spur was visible from the railroad. However, the spur does not appear to go past the fence line into the Imsalco facility.
- 01-26-70 The parcel appears relatively unchanged from the 1964 aerial photograph.
- 01-16-86 The Southern Pacific Railroad and Imsalco spur appear as they did during the site visit.
- 02-15-94 The Southern Pacific Railroad and Imsalco spur appear as they did during the site visit.

WT-10-23

- 09-13-40 Highway 80/85 appeared to be a two-lane paved road, similar to what was observed by Growth personnel during the site visit.
- 02-20-49 Highway 80/85 appeared to be a two-lane paved road, similar to what was observed by Growth personnel during the site visit.
- 01-16-86 Highway 80/85 appeared to be a two-lane paved road, similar to what was observed by Growth personnel during the site visit.

02-15-94 Highway 80/85 appeared to be a two-lane paved road, similar to what was observed by Growth personnel during the site visit.

WT-10-25

09-13-40 The parcel appeared to be native desert and riparian vegetation. A large drainage crosses the parcel from the northeast to the southwest at the north end of the parcel.

02-20-49 The parcel appeared to be native desert and riparian vegetation. A large drainage crosses the parcel from the northeast to the southwest at the north end of the parcel. The southern portion of the parcel was agricultural and planted in row crops. A dirt farm road was visible on the south side of the drainage area and parallels the drainage channel. A north-south oriented dirt road was visible in the center of the 400 foot wide strip. Off-site, a farm compound was visible at the southeast corner of Highway 80/85 and Reems Road. A dirt road forms the southern boundary of Parcel WT-10-25. Farm equipment appeared to be parked in four separate areas along the dirt road at the southern boundary.

01-03-58 Dense vegetation was visible along the drainage channel that crosses the parcel. The southern portion of the parcel was planted in row crops.

01-21-64 This parcel appears relatively unchanged from the 1958 aerial photograph.

01-26-70 Vegetation along the drainage channel does not appear to be as dense as it was in the 1964 aerial photograph.

01-13-79 The northern portion of the parcel appeared to be densely vegetated from Highway 80/85 to the irrigation ditch. The southern portion of the parcel appeared to be planted in row crops.

01-16-86 The northern portion of the parcel appeared to be native vegetation with an irrigation ditch running east to west. Southern portion of parcel appeared to be planted in row crops.

02-15-94 The northern portion of the parcel appeared to be native vegetation with an irrigation ditch running east to west. Southern portion of parcel appeared fallow leveled agricultural land.

WT-10-37

09-13-40 The parcel was native desert. Reems Road, a dirt road, does not appear to be visible south of Highway 85. A dirt farm road crosses the parcel from east to the west.

02-20-49 The northern part of this parcel was planted in row crops. The southern portion was fallow agricultural land. Off-site, a farm compound appeared to be visible near the southeast corner of Reems Road and Highway 85. Reems Road does not extend beyond Broadway Road, a dirt farm road. A farmstead also was observed east of the site on the south side of Broadway Road. Utility poles were visible along Broadway Road.

01-03-58 This area appeared relatively unchanged.

01-26-70 This area appeared relatively unchanged.

01-16-86 The entire parcel was planted in row crops.

02-15-94 The entire parcel was planted in row crops.

WT-10-38

09-13-40 Out of flight range.

02-20-49 This parcel appeared to be native desert. The Buckeye Canal and White Tanks Canal were visible to the south. Reems Road dead ends at the canal.

01-03-58 This area appeared to have been placed in agricultural use.

01-26-70 This area appeared relatively unchanged from the 1958 aerial photograph.

01-16-86 The entire parcel was planted in row crops.

02-15-94 The western portion was planted in agricultural crops. The eastern portion of the parcel appeared to be fallow leveled land.

WT10-34

09-13-40 Out of flight range.

01-26-70 The Buckeye and White Tanks canals were visible.

01-16-86 The parcel appeared as it did during the site visit.

02-15-94 The parcel appeared as it did during the site visit.

WT10-40

09-13-40 Out of flight range. The Buckeye Canal was visible approximately 1 mile west of the Site.

02-20-49 This parcel appeared to be part of the floodplain for the Gila River. Two braided stream channels cross the parcel from the east to the west.

01-03-58 The canals were visible and the area appeared relatively unchanged.

01-26-70 This area appeared relatively unchanged.

01-16-86 Estrella Parkway, which forms the western border of the parcel, does not extend south beyond the Buckeye Canal.

02-15-94 The parcel appeared as it did during the site visit. The Buckeye and White Tanks canal were visible north of the parcel.

City Directories

Areas of the Site with specific street address at the time of the site inspection were reviewed for both the Litchfield Park and Goodyear street grid. The earliest available Cole Directory was 1963. Aerial photographs revealed that portions of the site appeared to have been developed since 1940. Parcels that appear to have been developed include the following:

Parcel	Tenant/Address	Year
WT10-20	Litchfield Park Airport, Litchfield Park	1966, 1971
	US Government Navy Department, Litchfield Park	1966
	Phoenix-Litchfield Airport, Goodyear	1975
	Goodyear Tire and Rubber, Litchfield Road, Goodyear	1975
WT10-22	Southern Pacific Railroad, Highway 80, Goodyear	1963, 1965, 1966
WT10-28	General Aluminum Corporation, 4265 Reems Road, Goodyear	1963, 1965, 1966
	Reclaimed Metals, Highway 80, Goodyear	1975, 1977, 1980, 1986
	Imsalco, 1393 South Reems Road, Goodyear	1989
	Imsalco, 3829 South Estrella Parkway, Goodyear	1993
WT10-30	Ronald Wood Ranch, Reems Road, Goodyear	1971, 1975
	Walter L. Burns, 2831 South Reems Road, Goodyear	1993
WT10-25, 37, 38	Robert M. Rayner, Ronald Rayner, West Broadway Road, Goodyear	1975, 1977, 1980
	A Tumbling T Ranches, West Broadway Road, Goodyear	1975, 1977, 1980, 1986, 1989
	Rayner Bros Farms, West Broadway Road, Goodyear	1977, 1980, 1986, 1989, 1993
Unknown	Southwest Smelting, Highway 80, Goodyear	1975
	Borg Metals, Highway 80, Goodyear	1977

Sanborn Fire Insurance Maps - The Sanborn Fire Insurance Map series illustrates detailed historical development in some older areas of the Phoenix area from the years 1890 to 1968. Growth conducted a review of the Sanborn Maps to evaluate evidence of historical development on the Site. This review confirmed that the Site lies beyond the limits of the map series.

Interviews - Interviews can be valuable sources of information pertaining to the site history of the Site. Interview forms were sent by mail to property owners or lessees of parcels WT-10-20, WT-10-22, WT-10-25, 37 and 38, and WT-10-28. Interview forms were returned by representatives of the City of Phoenix (WT10-20), Imsalco (WT10-28), and Discovery West Ranch Partners (agricultural lease WT10-20). Copies of completed interview forms are provided in Appendix D.

WT10-25, 37 and 38. Growth personnel conducted a telephone interview with Mr. Ronald Raynor, owner of A Tumbling T Ranches on March 6, 1995. Mr. Raynor indicated that he has owned parcels WT-10-25, 37 and 38 since 1946. Mr. Raynor indicated that the property was agricultural land. Currently wheat was planted on a portion of the property and two fields were bare. Mr. Raynor stated that DDT was commonly used on the property prior to being a banned product. Agricultural chemicals currently used are crop dependent and include

herbicides and insecticides. The majority of chemicals are applied by aerial spraying. However, Mr. Raynor stated that there also is some ground application. According to Mr. Raynor the chemicals are applied according to specific application mixtures and procedures.

Mr. Raynor stated that no USTs, ASTs, farm structures, or wells have been located on the 400 foot wide area affected by the Bullard Wash Outfall Study Area. According to Mr. Raynor, the only concern he is aware of is the area next to Highway 80/85 (WT-10-25), where the drainage channel is located. This channel, according to Mr. Raynor, formerly drained the Naval Air Facility. The Naval Air Facility, according to Mr. Raynor, formerly had its own treatment facility and plant and solvents would drain into the open channel.

WT10-20. An interview form was returned by Ms. Rosemary Ware, City of Phoenix Aviation Department for information on a 14.17 acre tract included as a portion of WT-10-20. A copy of the interview form and attachments are provided in Appendix D. The City of Phoenix acquired the 14.17 acre parcel from the Woods Family Enterprises Limited Partnership, on December 21, 1990. This tract is a safety buffer for the adjacent PGA and formerly and currently is used for agricultural purposes. The 14.17 acre tract is currently leased to Discovery West Ranch Partners. The property is used for growing cotton. Ms. Ware was unaware of any environmental liens placed against the property.

Attachments provided by Ms. Ware include:

- a) A summary of historical and clean-up activities at the PGA. The PGA served as the Litchfield Park Naval Air Facility beginning in World War II. The Goodyear Tire and Rubber Company also began operating Goodyear Aerospace, modifying and repairing aircraft, adjacent to the Naval Air Facility.
- b) Information provided in a March 10, 1993 public meeting on cleanup activities for the PGA Superfund Site.
- c) A public notice published in the Arizona Republic, May 26, 1993.
- d) The most recent PGA Superfund Site newsletter published by the EPA, dated March 1993.
- e) ADEQ letter to the EPA on a Nonfiler Discharge incident for Imsalco.
- f) Imsalco's response to the ADEQ letter and a copy of the consultant's report prepared by SAB.
- g) The legal description for the 14 acre agricultural parcel.
- h) Aerial photograph with the 14 acre site highlighted.
- i) A memo on pesticides used on the 14 acre site.

In addition, the February 1995 Monthly Progress Report to the EPA Region 9, was provided by the City of Phoenix.

Mr. Tim Smith, Discovery Ranches, returned an interview form. Mr. Smith stated that he has leased the 14-acre parcel from the City of Phoenix for three years (WT-10-20). According to information obtained from Mr. Ronald Wood Parcel WT-10-30 has been leased to Discovery Ranches. Wells were located on the adjacent property. The property is used to grow cotton and grains. According to Mr. Smith no USTs or ASTs currently or historically have been located on the leased City of Phoenix property. Mr. Smith had no knowledge of past spills, hazardous or petroleum storage, dumping, or environmental liens on the property. Mr. Smith indicated that pesticides have been used on the site. However, no specific information was provided.

WT10-28. An interview form was provided to Growth personnel during the site visit at the Imsalco facility (WT-10-28) on March 7, 1995. Mr. Shane Spencer, Environmental Officer, for Imsalco (now Imsamet), provided responses to the interview questionnaire. The Imsalco facility is an aluminum recycling facility. The City of Goodyear provides water to the facility. In addition, two industrial type II production wells are located at the northeast corner of the 40-acre parcel. Mr. Spencer indicated that two 5,000-gallon diesel tanks were removed from the facility in December, 1993. A 10,000-gallon double wall aboveground diesel tank was installed in January 1994.

Storm water retention ponds are located on the facility. No information was provided on two sump pumps observed during the March 7, 1995 site visit. Mr. Spencer was not aware of any environmental liens on the property.

WT10-30. Growth personnel conducted telephone interviews with Mr. Ronald R. Wood on April 20 and 21, 1995. Mr. Wood stated that the property was bare dirt when he purchased it in 1935. According to Mr. Wood, he currently owns 300 acres of which WT10-30 is a part. WT10-30 is currently leased to Discovery West Ranch Partnership. According to Mr. Wood, the property has been agricultural to the present and has been planted in cotton, alfalfa, and grain crops. Mr. Wood stated that toxaphene and DDT had been used in the past. Mr. Wood stated that Treflan 5™ which was observed on the site was used as a pre-emergent for weeds. Mr. Wood stated that two USTs formerly were located on the farm compound. One gasoline UST was removed approximately 10 to 20 years ago. This UST appeared to have leaked. Mr. Wood stated that the UST had been removed from the area south of the garage. No investigation had been conducted to determine the extent of contamination. A second diesel UST was removed approximately six years ago from the area south of the large Quonset hut. Mr. Wood did not believe that this UST had leaked. The tanks were removed from the property.

Mr. Wood stated that historically five domestic wells have been located on the site. A new well would be drilled when the old one ran dry. The old dry well would be filled in. Mr. Wood indicated that the large residence currently is on city sewer. However, Mr. Wood stated that the residences were on septic systems and that two pipes that Growth observed on the farm compound were vent pipes for cesspools.

Mr. Wood stated that paper trash is burned on the farm compound. All other solid waste is disposed of an a landfill.

Mr. Wood stated that to his knowledge the adjoining property to the south had always been an aluminum smelter. Mr. Wood indicated that numerous planes had been stored or cut up on the adjoining property and that the historic aircraft Enola Gay had been stored on the site.

Chain of Title Search - A chain of title search was not included in the scope of work.

Prior Environmental Reports - Environmental reports were reviewed for the PGA Superfund Site and the Imsalco facility. No information was available on prior environmental reports for other parcels. These reports are discussed in more detail in other sections of this report.

4.4 ADDITIONAL RECORD SOURCES

Registered Dry Wells - Arizona rules require owners to register all dry wells on their property with ADEQ. The Water Permits Unit of ADEQ maintains a list of all dry wells that have been registered with the State to date. According to ADEQ records, there are no registered dry wells within a 0.5-mile search distance of the Site. No dry wells are registered at the Site.

SARA Title II Notifiers - The SARA requires facilities which use, handle or store significant quantities of hazardous substances to prepare plans for potential emergencies involving those substances. SARA also requires the facilities to notify the public concerning these plans and to register with the EPA. Review of the EPA Toxic Release Inventory for 1987 through 1992 indicated that the Imsalco facility is listed in 1988. The Imsalco facility is reported to have had a total land/air release of 840,000 units of aluminum oxide in 1988. No other facilities are listed within a 0.5-mile minimum search distance of the Site.

Maricopa County Division of Air Pollution Control - Growth reviewed available files at the Maricopa County Division of Air Pollution Control (MCDAPC) for additional information on air permits and violations at the Imsalco facility. According to MCDAPC a current air quality permit is on file for the Imsalco facility (Permit #8701411). The 1992 emissions calculations indicated that solvent utilization, storage and transportation, and fuel combustion all occur at the facility. According to records on file, approximately 25 tons of aluminum dross and scrap were processed for 1994. A more recent permit has been issued to Imsamet (Permit #94-0096). Natural gas is used to fire equipment used in processing the aluminum dross.

Numerous citizen complaints and air quality violations are on file for past activities at the Imsalco site and for the previous occupant of the site, Reclaimed Metals. These complaints range from opacity and fugitive dust emissions, and noxious odors.

Registered Septic Tanks - Growth contacted the Maricopa County Department of Environmental Health (MCDEH) to obtain information pertaining to the possible presence of registered septic tanks on the Site. No septic tanks are registered to any of the Site parcels according to information received from MCDEH on septic tank registrations. According to Mike Campbell, the Imsalco site and farm compound located at the northwest corner of WT10-30 are old sites and may have had septic tanks installed prior to 1960. Mr. Campbell stated that Imsalco did have large evaporation ponds and ADEQ may have permitted the discharge of domestic waste into the ponds (MCDEH, personal communication, March 30, 1995).

Illicit Dumping Sites - Growth contacted Mr. Marion Sams at the MCDEH to obtain information regarding illicit dumping on the various parcels that comprise the Site. Mr. Sams stated in a telephone interview that some minor dumping, primarily of beehives, was located on WT-10-40. Some nonhazardous dumping consisting mostly of non-hazardous debris was occurring in the vicinity of the Gila River, although the majority of dumping occurs around the Gila River and Bullard Avenue. Mr. Sams stated that he knew the majority of the property owners in the area of the Site, and that no reported incidents are on file for the Site (MCDEH, personal communication, March 21, 1995).

City of Goodyear Fire Department - Growth contacted the City of Goodyear Fire Department of March 20, 1995 for information on underground storage tank activities or hazardous or petroleum incidents or permits on the Site. According to Mr. Mike Oman, Goodyear Fire Department, two USTs were removed from the Imsalco site approximately two years ago. The State Fire Marshall was present during the removal. Mr. Oman was unaware of any other incidents in the area (Goodyear Fire Department, personal communication, March 20, 1995). Growth contacted the State Fire Marshall Office of March 20, 1995. No response has been received as of this date.

Groundwater Quality - Growth reviewed the Groundwater Quality Results for 1991, 1992, 1993 and the first six months of 1994. This review indicated that although groundwater contamination has been confirmed in the area on and around the Site, no well data was available from this source within 0.5 miles of the Site for sampling events in 1991 or 1992. One irrigation well (B-1-1-19cdd) that is located approximately 0.5 miles west of the Site was sampled by ADEQ on March 1, 1994. No agricultural pesticides or herbicides analyzed were detected in concentrations above laboratory detection limits. The well is perforated between 96 and 242 feet bgs in the Upper Alluvial Unit of the Aquifer. The well exceeds Secondary Maximum Contaminant Levels (SMCLs) for total chloride in the water. Total chloride in water was 1,700 milligrams per liter (mg/l) in well B-1-1(19cdd),

well above the SMCLs of 250 mg/l. Nitrites also exceeded Arizona Water Quality Standards of 10 mg/l (14.3 mg/l).

Arizona Department of Water Resources (ADWR) - According to the ADWR, there are 71 wells within 0.5 miles of the Site. Eighteen wells are registered to the Site. Specific information on wells is listed in the following table:

Location	Owner	Registration Number	Depth (ft)	Diameter (in)	Well Use	Drill Date	Proximity to Site
B(1-1)17 dda	Goodyear Tire	WR 523615	89	9	M	1989	1/4 miles northeast
B(1-1)17 ddc	Goodyear Tire	WR 523891	110	1	T	1991	1/4 miles east northeast
B(1-1)17 ddc	Goodyear Tire	WR 532926	69	8	O	1992	1/4 miles east northeast
B(1-1)19 a	Beck Ranches, Inc.	WR 630964	315	4	D	1963	unknown
B(1-1)19 dcd	Goodyear 10 Partnership	WR 602991	275	1	D	NL	3/8 miles west
B(1-1)20	Cabrera	WR 640392	NL	NL	D	NL	unknown
B(1-1)20 aaa	Goodyear Tire	WR 532888	65	1	T	1991	1/2 mile east
B(1-1)20 aad	Goodyear Tire	WR 523626	150	8	M	1989	1/2 mile east
B(1-1)20 aad	Goodyear Tire	WR 526385	96	18	M	1989	1/2 mile east
B(1-1)20 aba	Goodyear Tire	WR 532886	110	1	T	1991	1/4 mile east
B(1-1)20 aba	Goodyear Tire	WR 532921	68	8	M	1992	1/4 mile east
B(1-1)20 abc	Goodyear Tire	WR 523625	97	12	M	1989	1/8 mile east
B(1-1)20 abc	Goodyear Tire	WR 526396	99	1	T	1989	1/8 mile east
B(1-1)20 abc	Goodyear Tire	WR 532885	60	1	T	1991	1/8 mile east
B(1-1)20 abc	Goodyear Tire	WR 532920	59	8	O	1992	1/8 mile east
B(1-1)20 acd	Goodyear Tire	WR 523616	NL	NL	M	1989	1/4 mile east
B(1-1)20 acd	Goodyear Tire	WR 526391	76	1	T	1989	1/4 mile east
B(1-1)20 adc	Goodyear Tire	WR 532887	70	1	T	1991	3/8 mile east
B(1-1)20 ada	Goodyear Tire	WR 523612	70	8	M	1989	1/2 mile east
B(1-1)20 adc	Goodyear Tire	WR 532922	46	8	O	1992	3/8 mile east
B(1-1)20 add	Anderson	WR 601508	221	6	JAD	1950	1/2 mile east
B(1-1)20 add	Anderson	WR 601765	275	6	D	1979	1/2 mile east
B(1-1)20 b	Wood	WR 606699	500	8	D	1970	site
B(1-1)20 bbb	Security Title Agency	WR 606700	278	16	A	1948	site
B(1-1)20 bbd	EPA Region 9	WR 517114	82	10	M	1987	site
B(1-1)20 bbd	EPA Region 9	WR 517121	NL	NL	N	1987	site

Location	Owner	Registration Number	Depth (ft)	Diameter (in)	Well Use	Drill Date	Proximity to Site
B(1-1)20 bca	EPA Region 9	WR 517098	NL	10	M	1987	site
B(1-1)20 bda	Goodyear Tire	WR 523623	89	12	M	1989	site
B(1-1)20 bda	Goodyear Tire	WR 526394	95	1	T	1989	site
B(1-1)20 bda	Goodyear Tire	WR 523624	110	12	M	1989	site
B(1-1)20 bda	Goodyear Tire	WR 526395	95	1	T	1989	site
B(1-1)20 bdc	Goodyear Tire	WR 532890	110	1	T	1991	site
B(1-1)20 bdc	Goodyear Tire	WR 532925	63	8	O	1992	site
B(1-1)20 cab	Goodyear Tire	WR 523621	120	12	M	1989	site
B(1-1)20 cab	Goodyear Tire	WR 526393	92	1	M	1989	site
B(1-1)20 cac	Goodyear Tire	WR 532918	53	8	O	1992	site
B(1-1)20 cba	Intl. Mill Serv. Inc.	WR 500659	213	10	F	1981	site
B(1-1)20 cba	Intl. Mill Serv. Inc.	WR 801409	200	16	F	NL	site
B(1-1)20 ccc	Plumb, RR	WR 638228	227	6	DJ	NL	1/8 west
B(1-1)20 cdb	City of Phoenix	WR 509925	35	NL	N	1985	site
B(1-1)20 d	Brown, CT	WR 635553	160	8	JD	1947	1/2 mile east
B(1-1)20 daa	Pioneer Trust Co.	WR 613508	NL	NL	A	NL	1/2 mile east
B(1-1)20 daa	Pioneer Trust Co.	WR 613515	NL	NL	D	NL	1/2 mile east
B(1-1)20 dad	Pioneer Trust Co.	WR 612580	NL	NL	A	1941	1/2 mile east
B(1-1)20 dba	Goodyear Tire	WR 532881	110	1	T	1991	1/4 mile east
B(1-1)20 dba	Goodyear Tire	WR 532916	47	8	O	1992	1/4 mile east
B(1-1)20 dbb	Goodyear Tire	WR 532618	100	18	N	1989	adjacent to east
B(1-1)20 dbb	Goodyear Tire	WR 532619	96	1	T	1989	adjacent to east
B(1-1)20 dbb	Goodyear Tire	WR 532889	110	1	T	1991	adjacent to east
B(1-1)20 dbb	Goodyear Tire	WR 532924	45	8	O	1992	adjacent to east
B(1-1)20 dbc	Goodyear Tire	WR 532882	60	1	T	1991	< 1/8 mile east
B(1-1)20 dbc	Goodyear Tire	WR 532817	50	8	O	1992	< 1/8 mile east
B(1-1)20 dd	Pioneer Trust Co.	WR 612586	NL	NL	A	NL	1/2 mile east
B(1-1)20 ddd	Stilwell, L.	Wr 624512	333	6	D	1972	1/2 mile east
B(1-1)29 aba	Pioneer Trust Co.	Wr 612581	NL	NL	A	1941	1/4 mile east
B(1-1)29 aba	Pioneer Trust Co.	WR 613512	425	8	D	1975	1/4 mile east
B(1-1)29 c	Gasparik, F.	WR 622616	306	6	DJ	1962	unknown - may be on site
B(1-1) 29 cbb	Buckeye Irrigation Co.	WR 619783	220	20	A	1957	1/8 mile west

Location	Owner	Registration Number	Depth (ft)	Diameter (in)	Well Use	Drill Date	Proximity to Site
B(1-1)29 cc	Fritz Gas Park	WR 635489	306	6	D	1963	unknown
B(1-1)29 cbb	Buckeye Irrigation Co.	WR 619783	220	20	A	1957	site
B(1-1)29 da	Pioneer Trust Co.	WR 612585	NL	NL	A	NL	1/2 mile east
B(1-1)29 dbb	Buckeye Irrigation Co.	WR 612785	335	20	A	1958	adjacent to east
B(1-1) 29 dda	Buckeye Irrigation Co.	WR 619782	545	20	A	1957	1/2 mile east
B(1-1)29 dda	Buckeye Irrigation Co.	WR 619836	NL	NL	D	NL	1/2 mile east
B(1-1)30 aba	City of Goodyear	WR 609251	220	20	A	1946	3/8 mile west
B(1-1)30 aba	Wade, E	WR 609251	226	8	D	1982	3/8 mile west
B(1-1)30 acd	City of Goodyear	WR 503175	140	10	D	1982	3/8 mile west
B(1-1)30 dbb	City of Goodyear	Wr 540350	40	2	M	1993	1/2 mile west
B(1-1)30 dbb	City of Goodyear	WR 540351	40	2	M	1993	1/2 mile west
B(1-1) 31 aaa	King Ranch Properties	WR 604171	360	20	A	1980	1/4 mile southwest
B(1-1)31 A.B.	King Ranch Properties	WR 604170	250	20	A	1959	3/8 mile southwest

NL = Not Listed
D = Domestic
F = Industrial

A = Agriculture
E = Municipal
J = Stock

M = Monitor
O = Observation
N = None

T = Test

5 INFORMATION FROM SITE RECONNAISSANCE AND INTERVIEWS

5.1 HAZARDOUS SUBSTANCES IN CONNECTION WITH IDENTIFIED USES

WT10-28. The Imsalco facility currently uses diesel fuel for earth moving equipment and trucks. In addition, solvents and degreasers are used at the facility. The aluminum dross recycling facility contains two very large piles of aluminum fines. The most easterly pile has been created since 1984. The very large pile of aluminum fines near the southwest corner of the parcel has been the subject of on-going ADEQ investigation for potential hazardous substances in connection with the fines. Sampling of the fines has been on-going as Imsalco is using non-hazardous fines as an ACA, and has been selling approximately 1,200 pounds per month of ACA material (MCDAPC Internal Memo, June 25, 1993).

WT10-20, 30, 25, 37 and 38. According to the current or prior owner of these parcels, the currently banned agricultural pesticides included toxaphene and DDT historically were used on these sites during periods when these materials were allowed.

5.2 HAZARDOUS SUBSTANCE CONTAINERS AND UNIDENTIFIED SUBSTANCE CONTAINERS

WT-28: Approximately twenty 55-gallon drums of various solvents, degreasers, oils, and hydraulic fluids were observed on the east and north sides of the maintenance building at the Imsalco facility.

5.3 STORAGE TANKS

WT10-28: Two 5,000 gallon steel diesel USTs were removed from Imsalco on December 28, 1993. The consultant's report prepared by Scott, Allard & Bohannon, Inc. indicated that several holes were observed in both tanks when they were removed from the tank pit. Approximately 430 tons of petroleum contaminated soil was disposed of at Waste Management's Butterfield facility between March 16 and March 21, 1994. ADEQ's most recent Case Evaluation of the LUST incident indicated that the extent of contamination appears to remain undefined and the LUST incident remains open.

A 10,000-gallon AST replaced the USTs discussed above. In addition, Imsalco has a 5,000-gallon mobile used oil tank that is generally located near the maintenance building.

WT10-34- A total of 13 ASTs were observed in a farm compound located near the northwest corner of this parcel. Four active diesel ASTs, and one active gasoline AST were observed along the eastern border of the farm compound. Limited soil staining was observed on the soils surrounding all five of these tanks.

Two water storage tanks were observed east of the large residence located in the farm compound. In addition four LP gas tanks were observed on the Site. One of the tanks located on the north side of the large residence appeared to be operational and three other tanks located near the southwest corner of the Site did not appear to be operational.

One small portable tank marked as diesel was observed on the south side of the large Quonset hut. Growth personnel were unable to determine whether the tank contained any liquid at the time of Growth's site inspection. Another tank located south of the large Quonset was unmarked and it could not be determined if the tank contained any liquid. No staining was observed around any of the tanks.

5.4 INDICATIONS OF POLY-CHLORINATED BIPHENYLS (PCBS)

Several pole-mounted transformers were observed on the Site. The transformers belong to Salt River Project (SRP). No leakage or staining was observed on the transformers. Prior correspondence with SRP indicates that SRP accepts responsibility for the environmental impact from PCBs contained in SRP-owned transformers.

5.5 INDICATIONS OF SOLID WASTE DISPOSAL

A small amount of non-hazardous debris was observed on WT10-40.

5.6 PHYSICAL SETTING ANALYSIS

WT10-40: Areas of dumping were observed near the dirt roads. Items observed among the dumping included wood debris, metal debris, household type trash, old bee hives and concrete debris. In one area of dumping located near the northeast corner of the Site, Growth personnel observed what appeared to be some pieces of asbestos cement siding. Also observed in this area was a 55-gallon drum three-quarters full of what appeared to be a hard plastic resin. The resin was in a solid state at the time of Growth's site visit and some pieces of the resin were scattered about the site from damage caused by gun shots.

5.7 ANY OTHER CONDITIONS OF CONCERN

The Bullard Wash Outfall Project is located in or adjoining the PGA Superfund site. Groundwater contamination has been confirmed in the area by VOCs and TPH. Service monitor, observation, and injection wells are located in the area of the proposed Bullard Wash Outfall Project. In addition, the injection pipeline for the PGA is located within or near the 400 foot wide area of WT10-20. These wells draw from Subunit A, the shallow water bearing unit.

6 SUMMARY AND CONCLUSIONS

6.1 SUMMARY OF FINDINGS

Based on the results of this Phase I ESA, the Site is a mixture of land uses including irrigated agricultural land, industrial, a farm compound, and riparian floodplains. The Site is located within and adjoins the PGA Superfund site. Groundwater contamination in the area by VOCs and TPH has been confirmed. Service monitor, observation, and injection wells are located in the area of the proposed Bullard Wash Outfall Project. In addition, the injection pipeline for the PGA is located within or near the 400 foot wide area of WT10-20. These wells are located Subunit A, the shallow water bearing unit. Groundwater in the vicinity of the Site is encountered approximately 40 feet bgs.

6.2 CONCLUSIONS

Growth has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-93 of a parcel of land, totaling approximately 300 acres. Any exceptions to, or deletions from, this practice are described in Section 2.4 of this report.

An exhaustive list of environmental concerns are located in and around the Site. Based on the proposed land use for the Bullard Wash Outfall Project, Growth has narrowed the list of environmental conclusions to the areas affected by construction of the Bullard Wash Outfall Project. Due to the broad scope of this project, these conclusions and recommendations represent the most significant findings of this investigation, and do not necessarily represent all potential environmental concerns for the Site. Based on discussions with the FCDMC four issues appear to be the most significant. These issues concern: 1) the routing of the channel to avoid disturbing the injection pipeline and network of wells on the PGA, 2) insuring worker safety, 3) the possibility of encountering hazardous materials during the construction of the project, 4) disposition of excavated materials, and 5) preventing migration of contaminants into lower levels of the aquifer. Growth's conclusions and recommendations, which are oriented specifically towards these concerns are outlined below:

WT10-20 - Phoenix Goodyear Airport. Prior sampling by the EPA and its consultants indicated low levels of pesticides and solvents in surface and shallow subsurface soils at the southwest corner of the airport property. Growth recommends that the FCDMC sample the sediments in the drainage channel and in dredge piles for metals, persistent pesticides and herbicides, and solvents. Although detected persistent pesticides are within background levels in historical agricultural areas of the Salt River Valley, Growth recommends that these levels be firmly established in the area of the Bullard Wash Outfall Project before proceeding with the project.

As the Site is located in the PGA Superfund Area, Growth recommends that all aspects of the construction of the Bullard Wash Outfall Project be coordinated with the EPA. Construction crews may be required to have completed OSHA 40 Hour training for construction activities within areas affected by the PGA. Growth recommends that an environmental professional be present or on call during construction activities to evaluate any unexpected conditions that may arise.

WT10-22 - Southern Pacific Railroad. Growth recommends that the FCDMC correspond with the Southern Pacific Railroad for specific information on any recorded spills which may have occurred in the area of the Bullard Wash Outfall project. In addition, information obtained from a review of air quality reports and site observations indicates that the aluminum fines on the Imsalco property have breached Imsalco's property boundaries. Evidence of aluminum fines were observed on the railroad right of way. Growth recommends that FCDMC sample surface soils for petroleum hydrocarbons, herbicides, and metals in the area where the project will cross the Southern Pacific to screen for elevated concentrations of these contaminants.

WT10-25, 37 and 38 - A Tumbling T Ranches. These parcels historically have been used for the production of row crops. Prior sampling was performed of sediments from the drainage ditch which crosses and in agricultural soils near Broadway Road. A test pit also was excavated by the EPA's consultant, Ecology and Environment, in the marshy area south of Highway 80. Samples were collected and analyzed for metals, pesticides and solvents. The solvent 2-butanone was found throughout the soil column in the soil boring from the marshy area. In addition, low levels of chromium, arsenic, zinc, and lead also were detected in the marshy area. Aluminum also has been detected in soils at levels between 15,497 mg/kg in near surface soils to 8,236 mg/kg at 2 feet bgs.

Growth recommends that surface and shallow subsurface soils be screened to quantify potential residues of persistent pesticides and herbicides that were commonly used in the 1940s through the 1960s. In addition, Growth recommends that sediments from the drainage ditch be collected and analyzed for elevated concentrations of solvents and metals.

WT10-28 - Imsalco (Imsamet). As the Bullard Wash Project has been described to Growth, it does not appear from alternative alignments of the proposed Bullard Wash Outfall Project that FCDMC will take title to any of the Imsalco property. This property has an extensive history as an aluminum recycling or smelting facility. Two very large piles of aluminum fines are located on the parcel. The Imsalco facility is also the site of an open LUST incident. It is unknown whether groundwater has been impacted by the LUST incident. If the FCDMC plans to take title to any portion of the Imsalco facility, Growth would recommend an extensive Phase II investigation to screen for the existence, nature and extent of contaminants on the Imsalco facility.

Two groundwater wells are located near the northwest corner of the Imsalco facility. FCDMC should insure that the plans for the Bullard Wash Outfall Project do not compromise the integrity of the wellhead by providing a means of access for contaminant migration into the lower levels of the aquifer. If construction will impact the wells, Growth recommends that the wells be formally abandoned in accordance with the requirements of ADWR.

WT10-30 - Woods Enterprises, Inc. This agricultural area and the adjoining 14-acre parcel that currently is owned by the City of Phoenix historically have been used for the production of row crops. According to alternative plans for the Bullard Wash Outfall Project this agricultural parcel is planned as a retention basin. Growth recommends a limited program of soil sampling be conducted on surface and near surface soils to screen and quantify potential residues of persistent pesticides and herbicides that were commonly used in the 1940s through the 1960s.

Growth is under the assumption that the farm compound located at the northwest corner of the parcel is excluded from the Bullard Wash Outfall Project. However, two USTs previously were removed from this portion of the property. One gasoline tank was reportedly removed approximately 15 years ago, prior to the implementation of the registration process by ADEQ. Mr. Ronald Wood indicated that this tank appeared to have leaked although no environmental investigation was conducted. A second UST was removed approximately 6 years ago and Mr. Woods' stated that he did not believe that the diesel tank had leaked. The gasoline tank was removed south of the large residence on the parcel.

If the FCDMC is planning to take title to the agricultural portion of WT10-30, Growth recommends that soil borings be conducted at the western edge of the property to determine whether any migration of petroleum hydrocarbons has occurred and created any potential impact to groundwater.

An area east of the large residence is used to burn paper trash according to Mr. Wood. Prior environmental investigations in and around farm compounds, and airstrips indicate that granulated pesticides and herbicides are known to accumulate in soils around farm burn areas. Growth recommends that, if the FCDMC is planning to take title to the farm compound, a program of surface and sub-surface soil sampling should be conducted in the burn area and other areas where bulk storage or mixing of pesticides and herbicides may have occurred.

If the FCDMC is planning to take title to any portion of the farm compound, Growth would recommend that an extensive site characterization be performed to screen for the presence and extent of a release and potential impact to site soils and groundwater.

WT10-34 - Buckeye Irrigation Project. An active irrigation well and canal are located on this parcel. FCDMC should insure that the plans for the Bullard Wash Outfall Project do not compromise the integrity of the wellhead by providing a means of access for contaminant migration into the lower levels of the aquifer. If construction will impact the well, Growth recommends that the well be formally abandoned in accordance with the requirements of ADWR.

WT10-40. Growth recommends that the non-hazardous debris be removed from this parcel. FCDMC may wish to post the property with no dumping signs and limit vehicular access to the parcel from Estrella Parkway.

Two groundwater wells are located near the northwest corner of the Imsalco facility. FCDMC should insure that the plans for the Bullard Wash Outfall Project do not compromise the integrity of the wellhead by providing a means of access for contaminant migration into the lower levels of the aquifer. If construction will impact the wells, Growth recommends that the wells be formally abandoned in accordance with the requirements of ADWR.

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An area east of the large residence is used to burn paper trash according to Mr. Wood. Prior environmental investigations in and around farm compounds, and airstrips indicate that granulated pesticides and herbicides are known to accumulate in soils around burn areas. Growth recommends that if the FCDMC is planning to take the farm compound an program of surface and sub-surface soil sampling should be conducted in the burn area and other areas where bulk storage or mixing of pesticides and herbicides may been occurred.

Growth is under the assumption that the farm compound located at the northwest corner of the parcel is excluded from the Bullard Wash Outfall Project. However, two USTs were removed from the property. One gasoline tank was reportedly removed approximately 15 years ago, prior to the implementation of the registration process by ADEQ. Mr. Woods indicated that this tank appeared to have leaked although no environmental investigation was conducted. A second UST was removed approximately 6 years ago and Mr. Woods stated that he did not believe that the diesel tank had leaked. The gasoline tank was removed south of the large residence on the parcel.

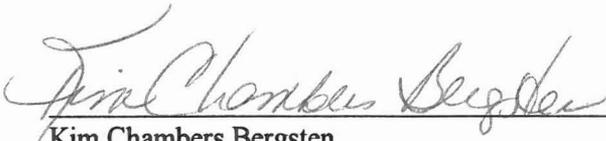
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If the FCDMC is planning to take title to any portion of the farm compound, Growth recommends an extensive site characterization be performed to screen for the presence and extent of a release and potential impact to site soils and groundwater.

WT10-34 - Buckeye Irrigation Project. An active irrigation well and canal are located on this parcel. FCDMC should insure that the plans for the Bullard Wash Outfall Project do not compromise the integrity of the wellhead by providing a means of access for contaminant migration into the lower levels of the aquifer. If construction will impact the well, Growth recommends that the well be formally abandoned in accordance with the requirements of ADWR.

WT10-40. Growth recommends that the non-hazardous debris be removed from this parcel. FCDMC may wish to post the property with no dumping signs and limit vehicular access to the parcel from Estrella Parkway.

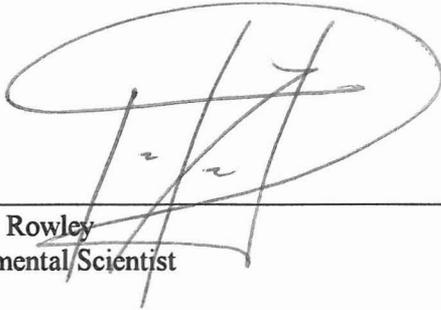
7 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS



Kim Chambers Bergsten
Environmental Scientist

May 1, 1995

Date



Corey S. Rowley
Environmental Scientist

May 1, 1995

Date

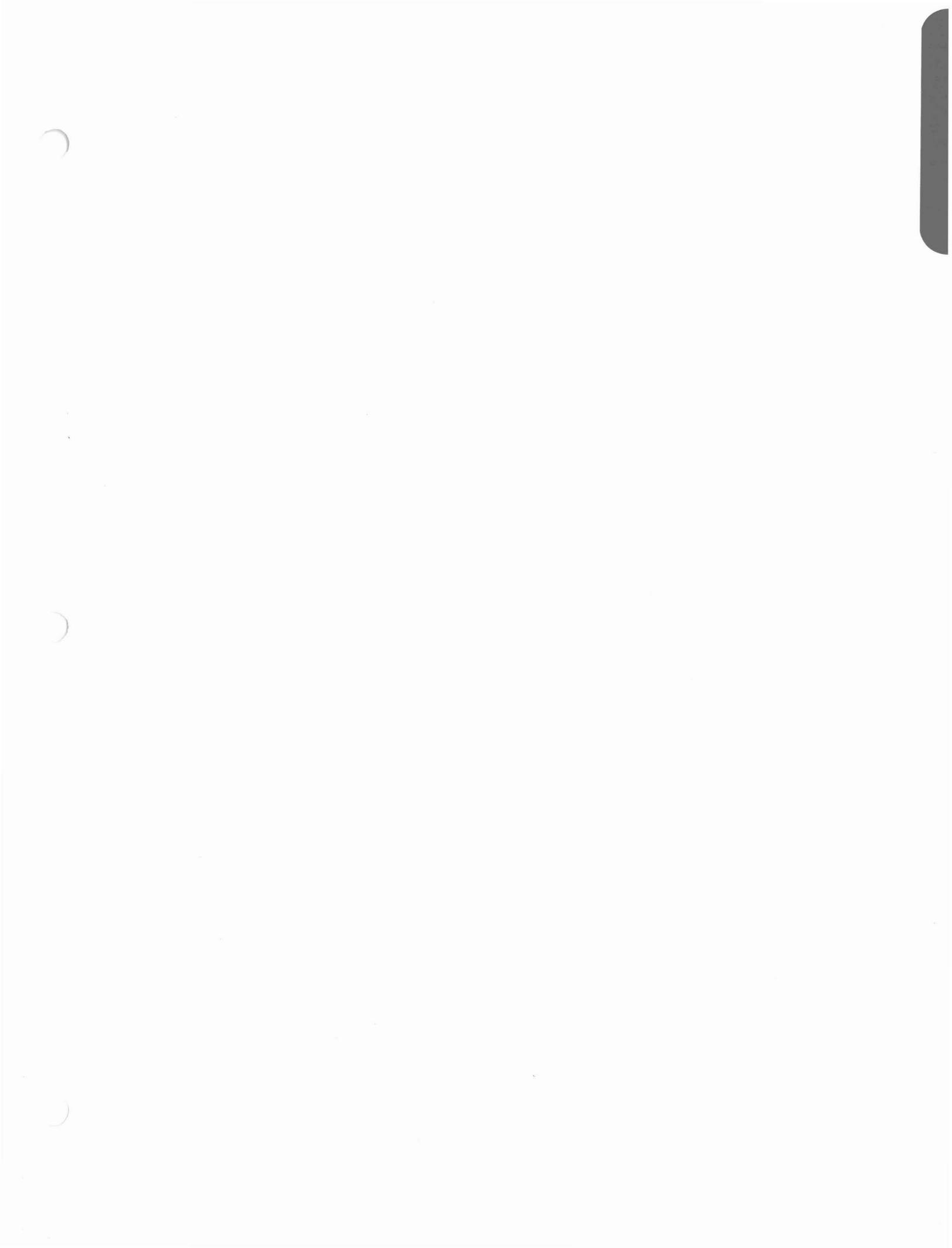


Dennis C. Knudsen, P.E.
Manager - Technical Services

5/1/95

Date

APPENDICES



APPENDIX A
SCOPE OF WORK

EXHIBIT A - SCOPE OF SERVICES
PHASE I ENVIRONMENTAL SITE ASSESSMENT
Arizona Sites

Growth Environmental Services, Inc., (GES) will perform a Phase I Environmental Site Assessment (ESA) of the *property* in accordance with American Society for the Testing of Materials (ASTM) Standard E 1527 - 93. The scope of these services will include the following tasks. All italicized terms refer to the definitions set forth in Section 3.2 of the ASTM Standard. All work will be performed under the supervision of a qualified *environmental professional*.

TASK 1.0 - RECORDS REVIEW

GES will obtain and review *reasonably ascertainable* and *practically reviewable* records in an attempt to identify *recognized environmental conditions* in connection with the *property*. GES may utilize commercial sources for some aspects of the records review. The records will include the following *standard environmental record sources*

List	Approximate Minimum Search Distance (miles)
Federal NPL Site List	1.0
Federal CERCLIS List	0.5
Federal RCRA TSD Facility List	1.0
Federal RCRA Generator List	<i>property</i> and adjoining properties
Federal ERNS List	<i>property</i> only
ADEQ WQARF (State Superfund) List	1.0
Arizona CERCLA Information and Data System (ACIDS) List	1.0
ADEQ Open Landfills List	0.5
ADEQ Closed Landfills and Dumps List	0.5
ADEQ Registered UST List	<i>property</i> and adjoining properties
ADEQ Reported Leaking UST List	0.5

Task 1.1 - Additional Environmental Record Sources

The records may include one or more of the following *additional environmental record sources*, at the discretion of the *environmental professional*, to enhance and supplement the federal and state sources identified above.

List	Approximate Search Distance (miles)
Local or County Lists of Landfill/Solid Waste Disposal Sites	0.5
Records of Emergency Release Reports (SARA 304)	<i>property</i> only
Records of Contaminated Public Wells	0.5
Fire Department	<i>property</i> only
Local Water Quality Agency	0.5
Local Electric Utility Companies (for information relating to PCBs)	<i>property</i> only
Arizona Department of Water Resources Well Registry	0.5

Task 1.2 - Standard Physical Setting Source

GES will review a current USGS 7.5 Minute Topographic Map showing the area on which the *property* is located.

Task 1.3 - Standard Historical Sources

GES will review *reasonably ascertainable standard historical sources* in an attempt to develop a history of the previous uses or occupancies of the *property* and surrounding area. The objective will be to identify those uses or occupancies that are likely to have led to *recognized environmental conditions* in connection with the *property*. GES will attempt to identify uses or occupancies of the *property* from the present dating back to 1940, or until the *property* was first developed. At least one of the standard historical sources will be researched to 1940, or a combination of historical sources will be used to determine the use or occupancies of the *property* dating back to 1940, or until the *property* was first developed. Search intervals will be such to adequately establish the site history within the extent records are *reasonably ascertainable*.

- | | |
|--------------------------------|-------------------------------------|
| 1. Aerial Photographs | 5. USGS 7.5 Minute Topographic Maps |
| 2. Fire Insurance Maps | 6. Local Street Directories |
| 3. Property Tax Files | 7. Building Department Records |
| 4. Recorded Land Title Records | 8. Zoning/Land Use Records |

If authorized by client. The chain of title search is not included in the scope of services unless specifically added. The *user* should check or engage a title company to check for *reasonably ascertainable recorded land title records* for *environmental liens* currently recorded against the *property*. Any environmental liens currently recorded against the *property* should be reported to the environmental professional.

EXHIBIT A - SCOPE OF SERVICES (cont.)

After checking all *reasonably ascertainable standard historical sources*, whatever history of previous site uses is available shall be deemed sufficient to comply with the ASTM Practice.

TASK 2.0 -SITE RECONNAISSANCE

GES will conduct a *site visit* to the *property* during which the periphery of the *property* shall be *physically and visually observed*, as well as any structure(s) located on the *property*, to the extent the property or structures are not obstructed by bodies of water, adjacent buildings or other obstacles. The methodology used to observe the property will be documented in the report, as well as limitations imposed by physical obstacles and limiting conditions. The *site visit* will include:

General Site Setting: Current use of the property, adjoining properties, and surrounding area; past uses of the property, adjoining properties, and surrounding area, if indicated by the site reconnaissance; geologic, hydrogeologic, hydrologic, and topographic conditions, as indicated by visual observations; roads and structures on the property; the source of potable water and the sewage disposal system for the property.

Interior Observations: The means of heating and cooling the buildings on the property, including the fuel source. Stains/corrosion, floor drains, and sumps, to the extent they are visually or physically observed or identified from interviews, shall be described in the report.

Exterior Observations: The presence of hazardous materials including, but not limited to, polychlorinated biphenyls (PCBs), pesticides, above or below ground fuel/chemical storage tanks and pipelines, drums, transformers, drains, sumps, drywells, unidentified substance containers, unusual land colorations, and odors and physical irregularities. The presence of wells, stressed vegetation from other than insufficient water, pits, ponds or lagoons, and stained soil or pavement. The presence of waste water discharges to surface waters, septic systems, drains, drywells, holding ponds and public sewer systems. The presence of systems to dispose of solid wastes and other liquid waste. The presence of fill material other than landscaping material.

Adjoining Properties: This will include a visual examination, to the degree possible without trespass, of land use conditions that may adversely affect the *property* including: underground or above ground storage tanks; pits, ponds, and lagoons; landfills; stains, odors, distressed vegetation, or other obvious indications of *recognized environmental conditions*.

TASK 3.0 - INTERVIEWS WITH OWNERS AND OCCUPANTS

GES will make reasonable attempts to interview *owners* or *occupants* of the property to obtain information regarding *recognized environmental conditions* in connection with the *property*. Prior to the *site visit*, the *user* (client) should identify a person with good knowledge of the *property*. If a *key site person* is not identified prior to the site visit, GES will inquire during the site visit, whether a person with good knowledge of the property is available to be interviewed at that time.

Prior to the site visit, the *user* should provide, or cause to be provided to GES any applicable environmental permits, site assessment reports, environmental audits, registration information for underground storage tanks, hazardous waste generator reports, manifests, material safety data sheets, environmental violation notices or environmental liens, or other documents applicable to an evaluation of *recognized environmental conditions* on the site, of which the *user* or *key site person* is aware.

TASK 4.0 -INTERVIEWS WITH LOCAL GOVERNMENT OFFICIALS

GES will make reasonable attempts to interview *local government officials* to obtain information regarding *recognized environmental conditions* in connection with the *property*. A reasonable attempt will be made to interview a staff member from the local fire department, and the county health agency for information regarding hazardous waste disposal and septic tank information. It should be noted that responses from local government officials may not be received within the time allotted for this assessment.

TASK 5.0 - EVALUATION AND REPORT PREPARATION

The report will generally follow the format outlined in ASTM E1527-93 unless otherwise specifically requested. The report will include documentation of all sources, including those that revealed no findings. Credentials of the environmental professional(s) involved in conducting the Phase I ESA will be provided including a qualifications statement of relevant experience of the individual(s) and corporate experience. The environmental professional(s) responsible for the Phase I ESA shall sign the report.

The report shall state whether the *user* (client) reported to the *environmental professional* any information pursuant to the *user's* responsibilities.

The report shall include the *environmental professional's* opinion of the impact of *recognized environmental conditions* in connection with the *property*.

EXHIBIT A - SCOPE OF SERVICES (cont.)

The report shall have a findings and conclusions section that states one of the following:

"GES has performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E 1527 of, the *property*. Any exceptions to, or deletions from, this practice are described in Section [] of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property," or

"GES has performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E 1527 of, the *property*. Any exceptions to, or deletions from, this practice are described in Section [] of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the *property* except for the following: (list)."

All deletions and deviations from this practice shall be listed individually and in detail, and all additions shall be listed.

Any additional services including a broader scope of assessment, more detailed conclusions, liability/risk evaluations, work plans for Phase II investigations, remediation techniques, etc., are beyond the scope of this practice.

LIMITATIONS OF THIS SCOPE OF SERVICES

Not every *property* will warrant the same level of assessment. Consistent with good commercial or customary practice, the appropriate level of environmental site assessment will be guided by the type of property subject to assessment, the expertise and risk tolerance of the user, and the information developed in the course of inquiry.

The Phase I ESA process is not intended to provide a guarantee regarding the presence or absence of *petroleum products* or *hazardous substances* on the *property*. The findings and conclusions of this assessment will be limited by the following factors:

1. The proposed scope of work is not an exhaustive inquiry, but represents an appropriate, commercially prudent, and reasonable level of effort. In accordance with the ASTM Standard, this assessment is intended to reduce, but not eliminate, the level of uncertainty regarding the potential for recognized environmental conditions on the Site.
2. The availability of data may be limited, particularly in regards to historical Site uses. Where such limitations are material to the conclusions of the assessment, they will be identified in the report.
3. GES cannot verify the accuracy of data obtained from government agencies, commercial sources, interview subjects, and other third-party sources.

This Phase I ESA represents conditions which exist at the time the work is performed, and should not be considered indicative of conditions which may exist at a substantially later date. The assessment will be completed in accordance with a reasonable understanding of the *recognized environmental conditions* and regulatory standards which exist at the time the work is performed.

ASSUMPTIONS

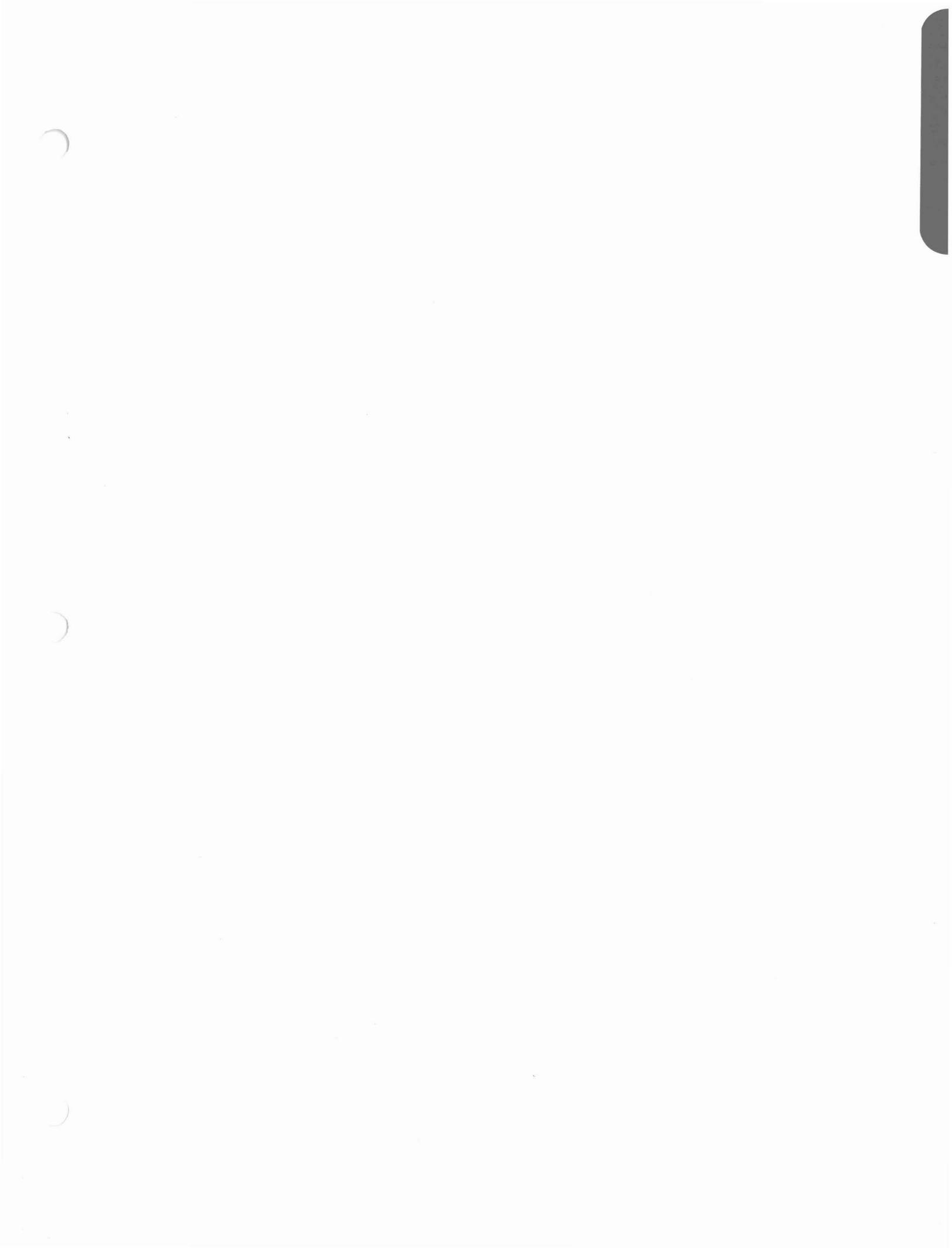
GES' proposal to complete these services within the quoted cost and time are based upon certain assumptions. These include the cooperation of the site owners and occupants, and full access to the entire site without delay or re-work. GES also assumes that if the *user* is aware of any specialized knowledge or experience that is material to *recognized environmental conditions* in connection with the *property*, the *user* will communicate any information based on such specialized knowledge or experience to the *environmental professional* prior to the site visit.

EXCLUSIONS

This Scope of Services does not include an evaluation of issues which are not addressed in the ASTM standard. Non-scope considerations a client may wish to address in connection with a Phase I ESA are listed below:

Archeological or other Cultural Resources	Asbestos-Containing Materials
Flood Zone Information (FEMA)	Lead-Based Paint
Lead in Drinking Water	Occupational Safety and Health Hazards
Radon	Threatened or Endangered Plants and Animals
Wetlands	

This list of non-scope considerations is not intended to be all-inclusive.



APPENDIX B

DEFINITIONS

DEFINITIONS AND DESCRIPTION OF TERMS SPECIFIC TO THE ASTM STANDARD

Actual knowledge - the knowledge actually possessed by an individual who is a real person, rather than an entity. Actual knowledge is to be distinguished from constructive knowledge than is knowledge imputed to an individual of entity.

Adjoining properties - any real property or properties the border of which is contiguous or partially contiguous with that of the property, or that would be contiguous or partially contiguous with that of the property but for a street, road, or other public thoroughfare separating them.

Aerial photographs - photographs taken from an airplane or helicopter (from a low enough altitude to allow identification of development and activities) of areas encompassing the property.

Appropriate inquiry - that inquiry constituting "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in CERCLA 42 USC § 9601(35)B, that will give a party to a *commercial real estate* transaction the *innocent landowner defense* to CERCLA liability (42 USC § 9601(A) and (B) and § 9607(b)(3)), assuming compliance with other elements of the defense.

Approximate minimum search distance - the area for which records must be obtained and reviewed pursuant to Section 7 of ASTM E 1527-3, subject to the limitations provided in that section. This may include areas outside the property and shall be measured from the nearest *property* boundary. This term is used in lieu of radius to include irregularly shaped properties.

Asbestos - six naturally occurring fibrous minerals in certain types of rock formations. Of the six, the minerals chrysotile, amosite, and crocidolite have been most used in building products. When mined and processed, asbestos is typically separated into very thin fibers. Because asbestos is strong, incombustible, and corrosion-resistant, asbestos was used in many commercial products beginning early in this century and peaking in the period from World War II into the 1970s. When inhaled in sufficient quantities, asbestos fibers can cause serious health problems.

Asbestos-containing material (ACM) - any material or product that contains more than one percent asbestos.

Building department records - those records of the local government in which the property is located indicating permission of the local government to construct, alter, or demolish improvements on the property.

Commercial real estate - any real property except a dwelling or property in with no more than four dwelling units exclusively for residential use (except that a dwelling or property with no more than four dwelling units exclusively for residential use is included in this term which it has a commercial function, as in the building of such dwellings for profit). This term includes but is not limited to undeveloped real property and real property used for industrial, retail, office, agricultural, other commercial, medical, or educational purposes; properties used for residential purposes that has more than four residential dwelling units; and property with no more than four dwelling units for residential use when it has a commercial function, as in the building of such dwellings for profit.

Commercial real estate transaction - a transfer of title to or possession of real property or receipt of a security interest in real property, except that it does not include transfer of title to or possession of real property or the receipt of a security interest in real property with respect to an individual dwelling or building containing fewer than five dwelling units, nor does it include the purchase of a lot or lots to construct a dwelling for occupancy by

a purchaser, but a commercial real estate transaction does include real property purchased or leased by persons or entities in the business of building or developing dwelling units.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) - the list of sites compiled by EPA that EPA has investigated or is currently investigating for potential hazardous substance contamination for possible inclusion on the National Priorities list.

Construction debris - concrete, brick, asphalt, and other such building materials discarded in the construction of a building or other improvement to property.

Contaminated public wells - public wells used for drinking water that have been designated by a government entity as contaminated by toxic substances, (e.g., chlorinated solvents), or as having water unsafe to drink without treatment.

Demolition debris - concrete, brick, asphalt, and other such building materials discarded in the demolition of a building or other improvement to property.

Drum - a container (typically, but not necessarily, holding 55 gal (208 L) of liquid) that may be used to store hazardous substances or petroleum products.

Dry wells - underground areas where soil has been removed and replaced with pea gravel, coarse sand, or large rocks. Dry wells are used for drainage, to control storm runoff, for the collection of spilled liquids (intentional and non-intentional) and wastewater disposal (often illegal).

Due diligence - the process of inquiring into the environmental characteristics of a parcel of *commercial real estate* or other conditions, usually in connection with a commercial real estate transaction. The degree and kind of due diligence vary for different properties and differing purposes.

Dwelling - structure or portion thereof used for residential habitation.

Environmental audit - the investigative process to determine if the operations of an existing facility are in compliance with applicable environmental laws and regulations. This term should not be used to describe Practice E 1528 (Transaction Screen) or Practice E 1527 (Phase I Environmental Site Assessment), although an environmental audit may include an *environmental site assessment* or, if prior audits are available, may be part of an environmental site assessment.

Environmental lien - a charge, security, or encumbrance upon title to a *property* to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of *hazardous substances* or *petroleum products* upon a *property*, including (but not limited to) liens imposed pursuant to CERCLA 42 USC § 9607(1) and similar state or local laws.

Environmental professional - a person possessing sufficient training and experience necessary to conduct a *site reconnaissance*, *interviews*, and other activities in accordance with ASTM E 1527 Practice, and from the information generated by such activities, having the ability to develop conclusions regarding *recognized environmental conditions* in connection with the *property* in question. An individual's status as an environmental professional may be limited to the type of assessment to be performed or to specific segments of the assessment for which the professional is responsible. The person may be an independent contractor or an employee of the *user*.

Environmental site assessment (ESA) - the process by which a person or entity seeks to determine if a particular parcel of real *property* (including improvements) is subject to *recognized environmental conditions*. At the

option of the user, an environmental site assessment may include more inquiry than that constituting *appropriate inquiry* or, if the user is not concerned about qualifying for the *innocent landowner defense*, less inquiry than that constituting *appropriate inquiry*. An environmental site assessment is both different from and less rigorous than an *environmental audit*.

ERNS list - EPA's Emergency Response Notification System list of reported CERCLA hazardous substance releases or spills in quantities greater than the reportable quantity, as maintained at the National Response Center. Notification requirements for such releases or spills are codified in 40 CFR Parts 302 and 355.

Federal Register (FR) - publication of the United States government published daily (except for federal holidays and weekends) containing all proposed and final regulations and some other activities of the federal government. When regulations become final, they are included in the Code of Federal Regulations (CFR), as well as published in the Federal Register.

Fill dirt - dirt, soil, sand, or other earth, that is obtained off-site, that is used to fill holes or depressions, create mounds, or otherwise artificially change the grade or elevation of real property. It does not include material that is used in limited quantities for normal landscaping activities.

Fire insurance maps - maps produced for private fire insurance companies that indicate uses of properties at specified dates and that encompass the property.

Hazardous substance - A substance defined as a hazardous substance pursuant to CERCLA 42 USC § 9601(1), as interpreted by EPA regulations and the courts; "(A) any substance designated pursuant to section 1321(b)(2)(a) of Title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (42 USC § 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC § 6901 *et seq.*) has been suspended by Act of Congress), (D) any toxic pollutant listed under section 1317(a) of Title 33, (E) any hazardous air pollutant listed under section 112 of the Clean Air Act (42 USC § 7412), and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator of the EPA has taken action pursuant to section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)."

Hazardous waste - any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (42 USC § 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC § 6901 *et seq.*) has been suspended by Act of Congress). The Solid Waste Disposal Act of 1980 amended RCRA. RCRA defines a hazardous waste, in 42 USC § 6903, as: "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may--(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

Hazardous waste/contaminated sites - sites on which a release has occurred, or is suspected to have occurred, or is suspected to have occurred, of any *hazardous substance*, *hazardous waste*, or *petroleum products*, and that release or suspected release has been reported to a government entity.

Innocent landowner defense - that defense to CERCLA liability provided in 42 USC § 9601(35) and § 9607(b)(3). One of the requirements to qualify for this defense is that the party make "all appropriate inquiry

into the previous ownership and uses of the property consistent with good commercial or customary practice." There are additional requirements to qualify for this defense. See Appendix XI of ASTM Standard E 1527 or E 1528.

Interviews - those portions of ASTM Practice E 1527 that address questions to be asked of *owners* and *occupants* of the *property* and questions to be asked of local government officials.

Key site manager - the person identified by the *owner* of a *property* as having good knowledge of the uses and physical characteristics of the property.

Landfill - a place, location, tract of land, area or premises used for the disposal of solid wastes as defined by state solid waste regulations. The term is synonymous with the term *solid waste disposal site* and is also known as a garbage dump, trash dump, or similar term.

Local government agencies - those agencies of municipal or county government having jurisdiction over the *property*. Municipal and county government agencies include but are not limited to cities, parishes, townships, and similar entities.

Local street directories - directories published by private (or sometimes government) sources that show ownership, occupancy, and/or use of sites by reference to street addresses.

LUST sites - state lists of leaking underground storage tank sites. Section 9003 (h) of Subtitle I of RCRA gives EPA and states, under cooperative agreements with EPA, authority to clean up releases from UST systems or require owners and operators to do so.

Major occupants - those tenants, subtenants, or other persons or entities each of which uses at least 40% of the leasable area of the *property* or any anchor or tenant when the *property* is a shopping center.

Material safety data sheet (MSDS) - written or printed material concerning a *hazardous substance* which is prepared by chemical manufacturers, importers, and employers for hazardous chemicals pursuant to OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

National Contingency Plan (NCP) - the National Oil and Hazardous Substances Pollution Contingency Plan, found at 40 CFR § 300, that is the EPA's blueprint on how hazardous substances are to be cleaned up pursuant to CERCLA.

National Priorities List (NPL) - list compiled by EPA pursuant to CERCLA 42 USC § 9605(a)(8)(B) of properties with the highest priority for cleanup pursuant to EPA's hazard ranking system. See 40 CFR Part 300.

Occupants - those tenants, subtenants, or other persons or entities using the *property* or a portion of the *property*.

Obvious - that which is plain or evident; a condition or fact that could not be ignored or overlooked by a reasonable observer while *visually or physically observing the property*.

Other historical sources - any source or sources other than *aerial photographs, fire insurance maps, property tax files, recorded land title records, USGS 7.5 Minute topographic maps, local street directories, building department records, or zoning/land use records* that are credible to a reasonable person and that identify past uses or occupancies of the property. The term includes records in the files and/or personal knowledge of the *property owner* and/or *occupants*.

Owner - generally the fee owner of record of the property.

Petroleum exclusion - the exclusion from CERCLA liability provided in 42 USC §9601(14), as interpreted by the courts and EPA: "The term (hazardous substance) does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

Petroleum products - those substances included within the meaning of the *petroleum exclusion* to CERCLA, 42 USC §9601(14), as interpreted by the courts and EPA, that is: petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under Subparagraphs (A) through (F) of 42 USC §9601(14), natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). (The word fraction refers to certain distillates of crude oil, including gasoline, kerosene, diesel oil, jet fuels, and fuel oil, pursuant to *Standard Definitions of Petroleum Statistics*).

Phase I Environmental Site Assessment - the process described in ASTM E 1527. A Phase I Environmental Site Assessment must be performed by an *environmental professional*.

Pits, ponds, or lagoons - man-made or natural depressions in a ground surface that are likely to hold liquids or sludge containing *hazardous substances* or *petroleum products*. The likelihood of such liquids or sludge being present is determined by evidence of factors associated with the pit, pond, or lagoon, including, but not limited to, discolored water, distressed vegetation, or the presence of an obvious wastewater discharge.

Physical setting sources - sources that provide information about the geologic, hydrogeologic, or topographic characteristics of a *property*.

Practically reviewable - information that is practically reviewable means that the information is provided by the source in a manner and in a form that, upon examination, yields information relevant to the *property* without the need for extraordinary analysis of irrelevant data. The form of the information shall be such that the user can review the records for a limited geographic area. Records that cannot be feasibly retrieved by reference to the location of the *property* or a geographic area in which the *property* is located are not generally *practically reviewable*. Most databases of public records are *practically reviewable* if they can be obtained from the source agency by the county, city, zip code, or other geographic area of the facilities listed in the record system. Records that are sorted, filed, organized, or maintained by the source agency only chronologically are not generally *practically reviewable*. For large databases with numerous facility records (such as RCRA hazardous waste generators and registered underground storage tanks), the records are not *practically reviewable* unless they can be obtained from the source agency in the small geographic area of zip codes. Even when information is provided by zip code for some large databases, it is common for an unmanageable number of sites to be identified within a given zip code. In these cases, it is not necessary to review the impact of all of the sites that are likely to be listed in any given zip code because that information would not be *practically reviewable*. In other words, when so much data is generated that it cannot be feasibly reviewed for its impact on the *property*, it is not *practically reviewable*.

Preparer - the person preparing the *transaction screen questionnaire* pursuant to Practice E 1528, who may be either the *user* or the person to whom the *user* has delegated the preparation of the *transaction screen questionnaire*.

Property - the real property that is the subject of the *environmental site assessment* described in ASTM E 1527. Real property includes buildings and other fixtures and improvements located on the property and affixed to the land.

Property tax files - the files kept for property tax purposes by the local jurisdiction where the property is located and includes records of past ownership, appraisals, maps, sketches, photos, or other information that is reasonably ascertainable and pertaining to the property.

Publicly available - information that is publicly available means that the source of the information allows access to the information by anyone upon request.

RCRA generators - those persons or entities that generate hazardous wastes, as defined and regulated by RCRA.

RCRA generators list - list kept by EPA of those persons or entities that generate hazardous waste as defined and regulated by RCRA.

RCRA TSD facilities - those facilities on which treatment, storage, and/or disposal of hazardous wastes takes place as defined and regulated by RCRA.

RCRA TSD facilities list - list kept by EPA of those facilities on which treatment, storage, and/or disposal of hazardous wastes takes place as defined and regulated by RCRA.

Reasonably ascertainable - for purposes of both ASTM Practice E 1527 and E 1528, information that is (1) *publicly available*, (2) obtainable from its source within a reasonable time and cost constraints, and (3) *practically reviewable*.

Recognized environmental conditions - the presence or likely presence of any *hazardous substance* or *petroleum products* on a *property* under conditions that indicate an existing release, a past release, or a material threat of a release of any *hazardous substance* or *petroleum products* on the *property* or into the ground, groundwater, or surface water of the *property*. The term includes *hazardous substance* or *petroleum products* even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Recorded land title records - records of fee ownership, leases, land contracts, easements, liens, and other encumbrances on or of the property recorded in the place where land title records are, by law or custom, recorded for the local jurisdiction in which the *property* is located. (Often such records are kept by a municipal or county recorder or clerk). Such records may be obtained from title companies or directly from the local government agency. Information about the title to the property that is recorded in a U.S. district court or any place other than where land title records are, by law or concern, recorded for the local jurisdiction in which the property is located, are not considered part of recorded land title records.

Records of emergency release notifications (SARA § 304) - Section 304 of EPCRA or Title III of SARA requires operators of facilities to notify their local emergency planning committee (as defined in EPCRA) and state emergency response commission (as defined in EPCRA) of any release beyond the facility's boundary of any reportable quantity of any extremely hazardous substance. Often the local fire department is the local emergency planning committee. Records of such notifications are "Records of Emergency Release Notifications" (SARA § 304).

Records review - that part of the Phase I Environmental Site Assessment that addresses which records shall or may be reviewed.

Report - the written record of a transaction screen process as required by Practice E 1528 or the written report prepared by the environmental professional and constituting part of a "Phase I Environmental Site Assessment," as required by ASTM E 1527.

Site reconnaissance - that part of ASTM Practice E 1527 (§ 8) that addresses what should be done in connection with the *site visit*. The site reconnaissance includes, but is not limited to, the *site visit* done in connection with such a Phase I Environmental Site Assessment.

Site visit - the visit to the property during which observations are made constituting the *site reconnaissance* section of the Phase I Environmental Site Assessment in Practice E 1527 and the *site visit* requirement of the transaction screen process in Practice E 1528.

Solid waste disposal site - a place, location, tract of land, area, or premises used for the disposal of solid wastes as defined by state solid waste regulations. The term is synonymous with the term *landfill* and is also known as a garbage dump, trash dump, or similar term.

Solvent - a chemical compound that is capable of dissolving another substance and is itself a *hazardous substance*, used in a number of manufacturing/industrial processes including but not limited to the manufacture of paints and coatings for industrial and household purposes, equipment clean-up, and surface degreasing in metal fabricating industries.

Standard environmental record sources - those records specified in the Records Review Section of the Phase I Environmental Site Assessment of Practice E 1727 (§ 7.2.1.1).

Standard historical sources - those sources of information about the history of uses of property specified in the Records Review Section of the Phase I Environmental Site Assessment of Practice E 1727 (§ 7.3.4).

Standard physical setting source - a current USGS 7.5 topographic map (if any) showing the area of which the property is location.

Standard practices - the activities set forth in either Practice E 1527 or E 1528, or both, for the conduct of environmental site assessments.

Standard sources - sources of environmental, physical setting, or historical records specified in the Records Review (§ 7) of the Phase I Environmental Site Assessment of Practice E 1527.

State registered USTs - state lists of underground storage tanks required to be registered under Subtitle I, Section 9002 of RCRA.

Sump - a pit, cistern, cesspool, or similar receptacle where liquids drain, collect, or are stored.

Transaction screen process - the process described in Practice E 1527.

Transaction screen questionnaire - the questionnaire provided in Practice E 1527 (§ 6).

TSD facility - treatment, storage, or disposal facility (*see RCRA TSD facilities*).

Underground storage tank (UST) - any tank, including underground piping connected to the tank, that is or has been used to contain *hazardous substances or petroleum products* and the volume of which is 10% or more beneath the surface of the ground.

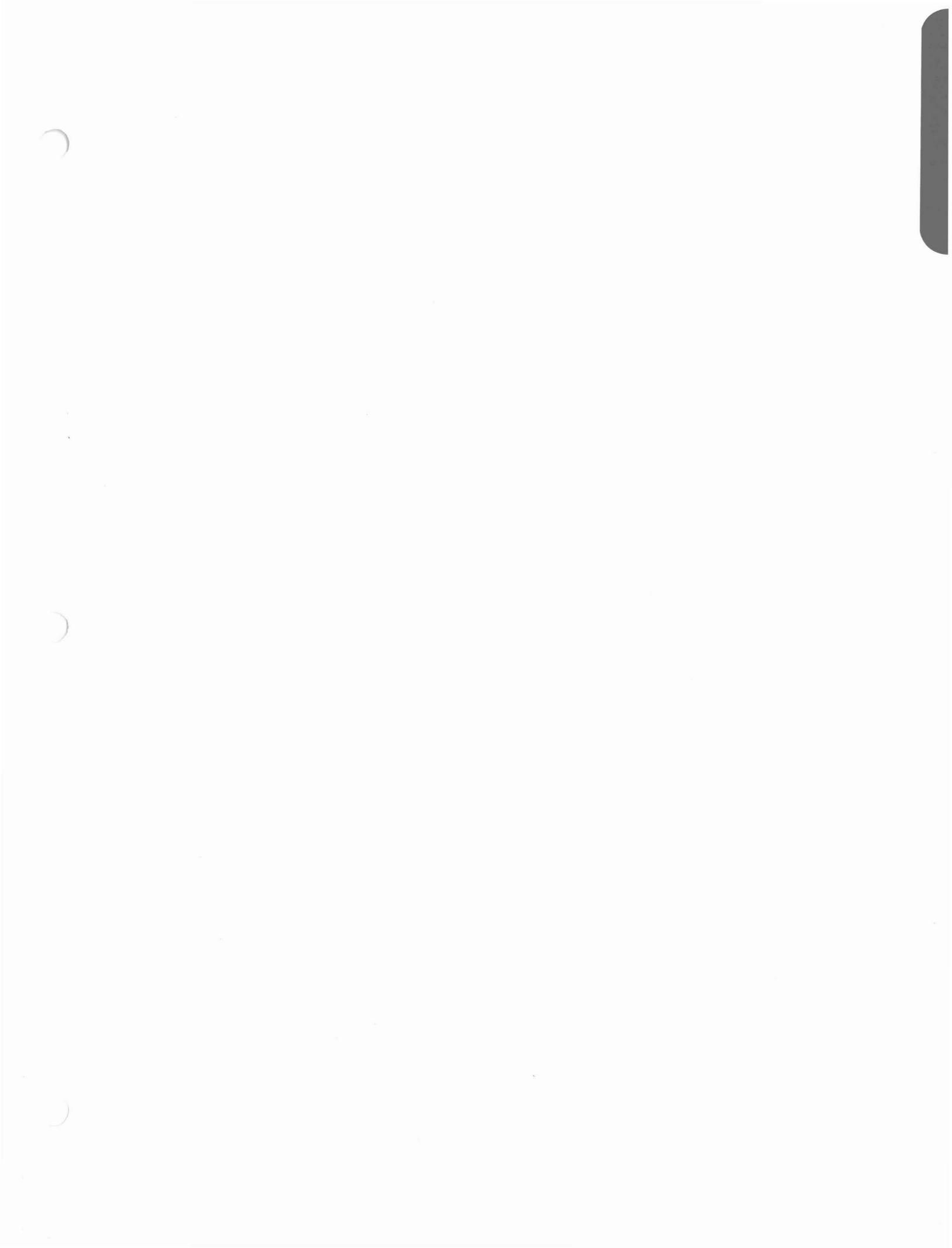
User - the party seeking to use Practice E 1528 to perform an *environmental site assessment* of the *property*. A user may include, without limitation, a purchaser of *property*, a potential tenant of *property*, an *owner* of *property*, a lender, or a property manager.

USGS 7.5 Minute Topographic Map - the map (if any) available from or produced by the United States Geological Survey, entitled "USGS 7.5 Minute Topographic Map," and showing the property.

Visually and/or physically observed - during a *site visit* pursuant to Practice E 1528 or E 1527, this terms means observations made by vision while walking through a *property* and the structures located on it and observations made by the sense of smell, particularly observations of noxious or foul odors. The term "walking through" is not meant to imply that disabled persons who cannot physically walk may not conduct a *site visit*; they may do so by the means at their disposal for moving through the *property* and the structures located on it.

Wastewater - water that (1) is or has been used in an industrial or manufacturing process, (2) conveys or has conveyed sewage, or (3) is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. Wastewater does not include water originating on or passing through or adjacent to a site, such as storm water flows, that has not been used in industrial or manufacturing processes, has not been combined with sewage, or is not directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

Zoning/land use records - those records of the local government in which the *property* is located indicating the uses permitted by the local government in particular zones within its jurisdiction. The records may consist of maps and/or written records. They are often located in the planning department of a municipality or county.



APPENDIX C
RIGHT OF ENTRY AGREEMENTS
AND
ADVANCE NOTICE OF SITE VISIT LETTERS



GROWTH

Growth Environmental Services, Inc.

Phoenix District
4041 N. Central Avenue, Suite 1050
Phoenix, AZ 85012-3393
602-248-8808
602-248-7722 Fax

February 28, 1995

Mr. A.W. Schelter, Jr.
Deputy Aviation Director
City of Phoenix
3400 Sky Harbor Boulevard
Phoenix, Arizona 85034-4420

**SUBJECT: ADVANCE NOTICE OF SITE VISIT FOR ENVIRONMENTAL ASSESSMENT
FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY BULLARD
WASH OUTFALL PROJECT, ASSESSOR'S PARCEL NO. 500-07-031E AND
FCD PARCEL NO. WT10-20 PER RIGHT-OF-ENTRY EASEMENT AND
AGREEMENT FOR FLOOD CONTROL PURPOSES**

Dear Mr. Schelter:

Growth Environmental Services, Inc. (GES) has been retained by the Flood Control District of Maricopa County to perform a Phase I Environmental Assessment (ESA) at Assessor's Parcel No. 500-07-031E. Right of entry has previously been granted by the City of Phoenix. A copy of the plat map is attached. In accordance with the Right-of-Entry Agreement, the site visit will be conducted on Wednesday, March 8, 1995. No digging, excavation, drilling or sampling of material will be performed by GES employees during this assessment.

Suitable safety equipment for all personnel on site will be utilized, including safety shoes, hard hats and safety glasses, under certain circumstances. GES requests permission to access the site and a knowledgeable City of Phoenix employee to accompany GES personnel while on the site. Two GES employees will conduct the site visit. These will include two of the following individuals: Kim Chambers Bergsten, Corey S. Rowley, Bruce Campbell, Madeline Montilla-Humbert, John Bishop or Alan Thomas. These individuals will be prepared to identify themselves as GES employees.

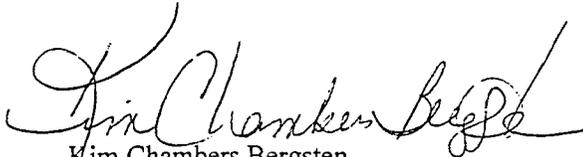
We are enclosing a copy of a Phase I Assessment Interview form which we request to be filled out by a knowledgeable City of Phoenix employee.

Mr. A.W. Schelter, Jr.
Notification for Phase I ESA Site Visit
FCD Parcel No.: WT10-20,
Bullard Wash Outfall Project
Page 2 of 2
February 28, 1995

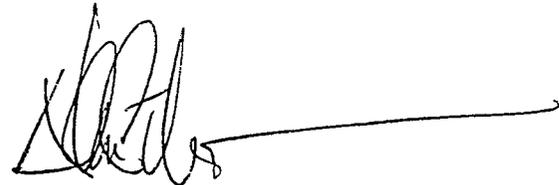
If you would like any additional information please feel free to contact Mr. William Knight, Flood Control District of Maricopa County at 506-1501, or Alan Thomas or Kim Chambers Bergsten at Growth Environmental Services, Inc. Thank you very much for your assistance.

Sincerely,

GROWTH ENVIRONMENTAL SERVICES, INC.



Kim Chambers Bergsten
Environmental Scientist



Alan C. Thomas
District Manager

Enclosures: Plat Map
Phase I Environmental Assessment
Interview Questions

cc: William Knight, Flood Control District
of Maricopa County
GES File AR390-1901



GROWTH
Growth Environmental Services, Inc.

Phoenix District
4041 N. Central Avenue, Suite 1050
Phoenix, AZ 85012-3393
602-248-8808
602-248-7722 Fax

March 3, 1995

Mr. Ken Seeley
Mr. Tim Smith
Discovery West Ranch Partners
2209 North 99th Avenue
Phoenix, Arizona 85037

SUBJECT: ADVANCE NOTICE OF SITE VISIT FOR ENVIRONMENTAL ASSESSMENT FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY BULLARD WASH OUTFALL PROJECT, ASSESSOR'S PARCEL NO. 500-07-031E AND FCD PARCEL NO. WT10-20 PER RIGHT-OF-ENTRY EASEMENT AND AGREEMENT FOR FLOOD CONTROL PURPOSES

Dear Mr. Seeley and Mr. Smith:

Growth Environmental Services, Inc. (GES) has been retained by the Flood Control District of Maricopa County to perform a Phase I Environmental Assessment (ESA) at Assessor's Parcel No. 500-07-031E. Right of entry has previously been granted by the City of Phoenix. A copy of the plat map is attached. In accordance with the Right-of-Entry Agreement, the site visit will be conducted on Wednesday, March 8, 1995. No digging, excavation, drilling or sampling of material will be performed by GES employees during this assessment.

According to representatives of the City of Phoenix, the property is currently leased to Discovery West Ranch Partners. GES personnel understand that the property is currently planted in barley. Extreme care will be taken by GES personnel to not damage any trees, shrubs or active cultivation. GES personnel will walk around the active cultivated area. No GES vehicle will be allowed on the property.

Suitable safety equipment for all personnel on site will be utilized, including safety shoes, hard hats and safety glasses, under certain circumstances. GES requests permission to access the site and a knowledgeable Discovery West Ranch employee may wish to accompany GES personnel while on the site. Two GES employees will conduct the site visit. These will include two of the following individuals: Kim Chambers Bergsten, Corey S. Rowley, Bruce Campbell, Madeline Montilla-Humbert, John Bishop or Alan Thomas. These individuals will be prepared to identify themselves as GES employees.

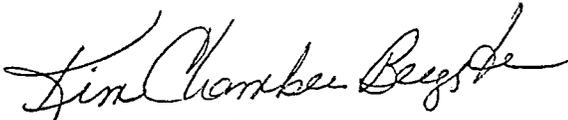
Mr. Ken Seeley and Mr. Tim Smith
Notification for Phase I ESA Site Visit
FCD Parcel No.: WT10-20,
Bullard Wash Outfall Project
Page 2 of 2
March 3, 1995

We are enclosing a copy of a Phase I Assessment Interview form which we request to be filled out by a knowledgeable Discovery West Ranch Partners employee to the best of their knowledge. GES requests that the interview form be returned by March 15, 1995.

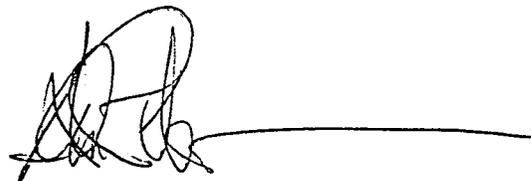
If you would like any additional information please feel free to contact Mr. William Knight, Flood Control District of Maricopa County at 506-1501, or Alan Thomas or Kim Chambers Bergsten at Growth Environmental Services, Inc. Thank you very much for your assistance.

Sincerely,

GROWTH ENVIRONMENTAL SERVICES, INC.



Kim Chambers Bergsten
Environmental Scientist



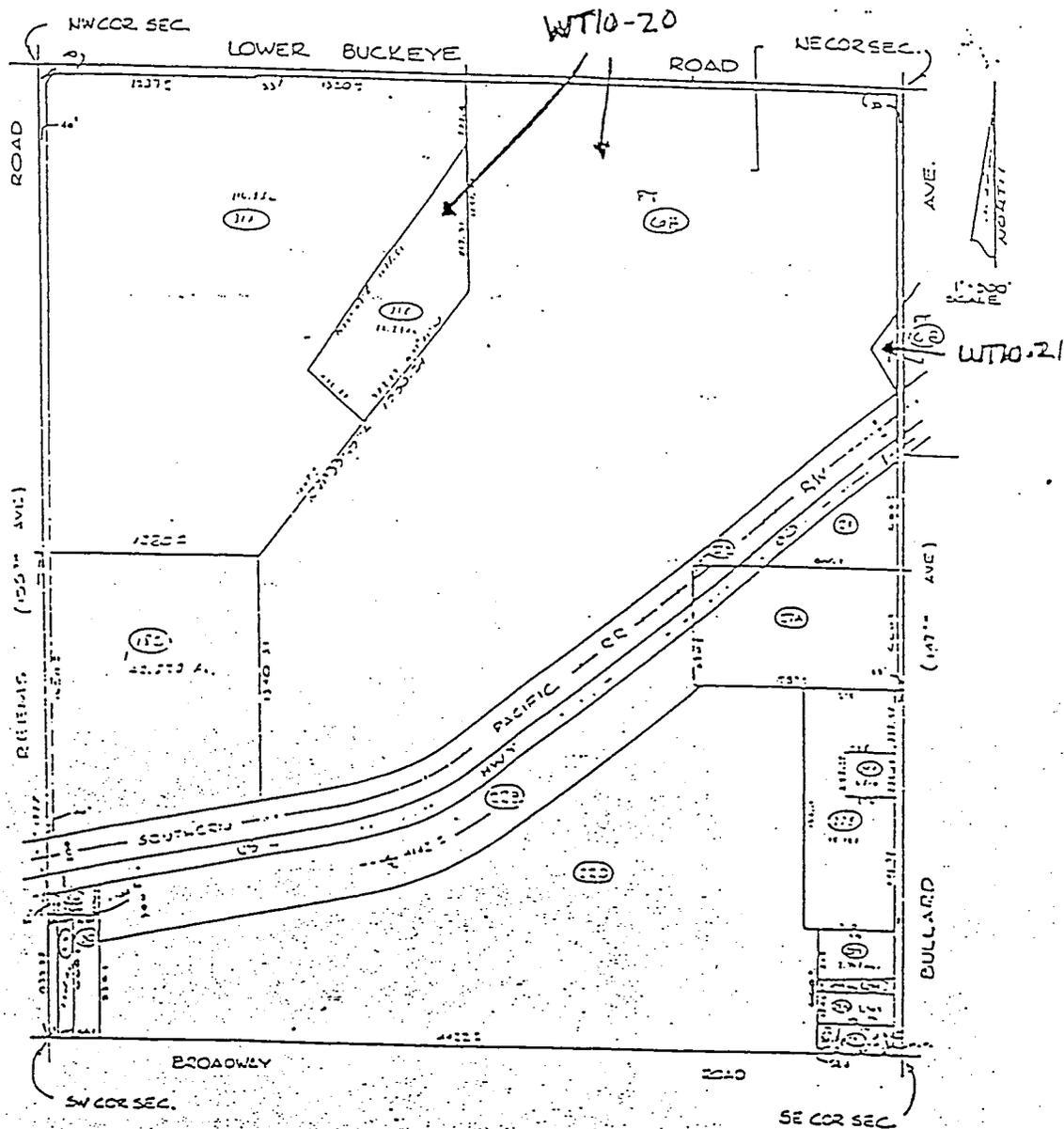
Alan C. Thomas
District Manager

Enclosures: Plat Map
Phase I Environmental Assessment
Interview Questions

cc: William Knight, Flood Control District
of Maricopa County
A.W. Schelter, Jr., City of Phoenix
GES File AR390-1901

SEC. 20-IN 1W

BOOK 500
MAP SHEET 3. 7



Typed: 07/15/94

When recorded, return to:
Flood Control District
of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

TEMPORARY RIGHT-OF-ENTRY
AGREEMENT FOR FLOOD CONTROL PURPOSES

Project: Bullard Wash Outfall Project
Item: WT10-3, 20, 21
Assessor's Parcel No.: 500-07-006G, 006H,
007B, 009B, 031E

This Right-of-Entry Agreement is entered into this 1st day of OCTOBER, 1994, by and between the following parties, and shall become effective upon the acceptance by the Board of Directors of the Flood Control District.

GRANTOR: CITY OF PHOENIX, a municipal corporation, its successors and assigns.

GRANTEE: FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, a municipal corporation and political subdivision of the State of Arizona, its agents, contractors, successors, and assigns.

FOR AND IN CONSIDERATION of the sum of One and no/100 Dollars (\$1.00), and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, GRANTOR hereby grants and conveys to GRANTEE, a Right-of-Entry for the following purposes, namely: The right of ingress and egress to complete archaeological survey, environmental assessment, geotechnical investigation, vegetation inventory, and wildlife assessment, including all incidental purposes consistent therewith, on, over, under, and across the real property as depicted on Exhibit "A" attached hereto and incorporated herein, and situated in the County of Maricopa, State of Arizona.

GRANTOR hereby covenants that it is granting this Right-of-Entry only to the extent of any interest it may have in the property described in Exhibit "A". This Right-of-Entry shall be at no cost to the GRANTEE for a term of one year from its acceptance date.

GRANTEE understands that the real property is a functioning general aviation airport and that

GRANTEE shall not enter the premises or take any action upon the premises without first coordinating its proposed activity with the on-site Airport Manager.

GRANTEE understands that the real property is part of a site designated by the United States Environmental Protection Agency as the Phoenix-Goodyear Airport Superfund Site and has been made aware of the existence of hazardous substance contamination.

All tools, equipment, supplies, and other personal property taken upon, or placed upon the land by GRANTEE, shall remain the property of GRANTEE, and may be removed by GRANTEE at any time within the period of this Right-of-Entry.

In the event any trees or shrubs within the right-of-way area are damaged, as a result of the rights granted, GRANTEE will replace with similar plantings or pay GRANTOR for such damages.

It is agreed and understood between the named parties, that GRANTEE will leave the land within the right-of-way area in a condition acceptable to GRANTOR for safety purposes.

This Right-of-Entry does not preclude the following rights of GRANTOR, namely; the right to grant and convey the real estate, the right to master plan and develop the real estate, and the right to cause construction upon the real estate as depicted on attached Exhibit "A", subject to all federal, state and local laws and ordinances with respect to environmental issues and land use, including, but not limited to floodplain regulations.

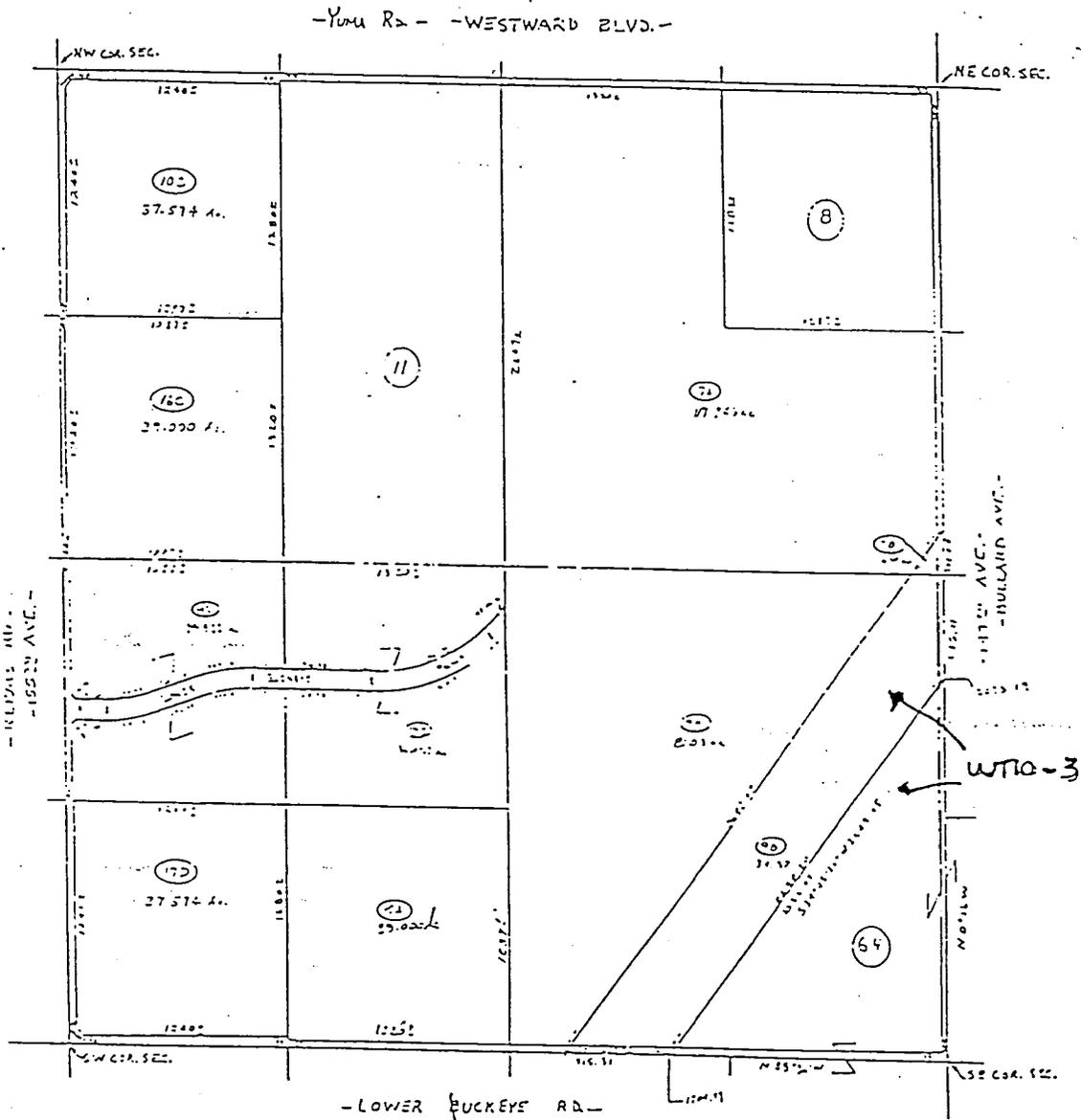
GRANTEE shall not commence the herein referenced studies upon any portions of the real property depicted on Exhibit "A", including, but not limited to, any portions which have been paved for aircraft or vehicular traffic or parking, or upon which a building or other structural improvement has been constructed, created, or situated (an "Improvement") without the permission of GRANTOR.

To the extent permitted by law, GRANTEE agrees to indemnify GRANTOR, or any of its departments, agencies, officers or employees, from and against loss, expense, damage, or claim of any nature whatsoever which is caused by any activity, condition, or event arising out of the non-performance by GRANTEE of any of its obligations under the provisions of this Right-of-Entry. GRANTOR shall in all instances be indemnified against liability, losses, and damages of any nature for or on account of injuries to or death of persons or damages to or destruction of property arising out of GRANTEE'S performance or non-performance of this Right-of-Entry, except such injury or damages as shall have been occasioned by the sole negligence of GRANTOR or any of its departments, agencies, officers, or employees. The above cost of damages incurred by GRANTOR or any of its departments, agencies, officers, or employees shall include, in the event of action, court costs, expenses for litigation, and reasonable attorney's fees.

.....
.....

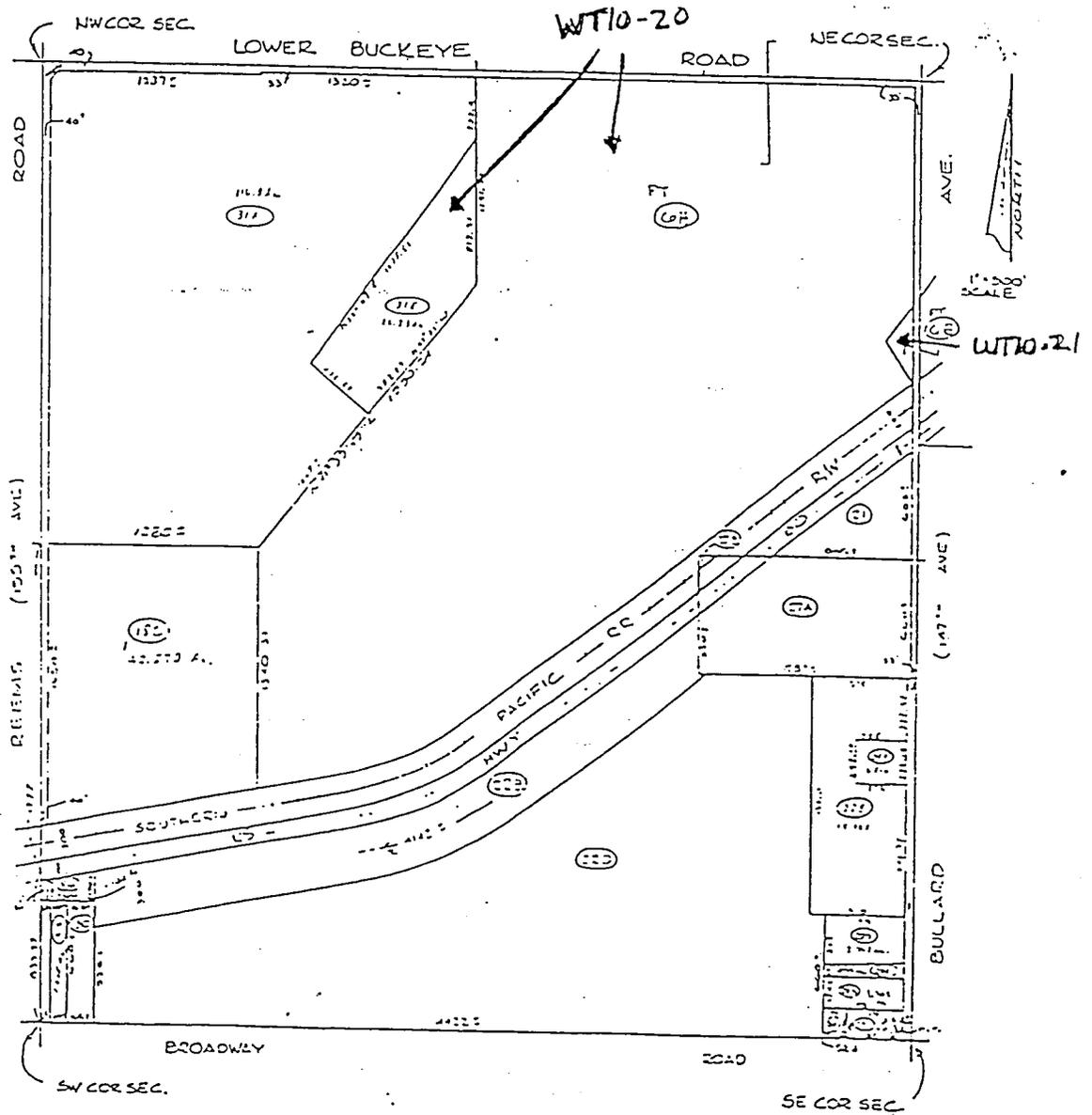
SEC. 17 IN/W

Book 500
MAP 7
Sheet Z



SEC. 20-1N 1W

BOOK 500
MAP SHEET 3. 7





City of Phoenix

To: Aviation Staff

Date:

9/21/94

From: N. A. Bertholf, Jr.
Aviation Director

Subject: DELEGATION OF AUTHORITY

In accordance with Administrative Regulation 1.51, James E. Bennett is authorized to act in my behalf and to approve and sign all documents requiring the approval of the Aviation Director as necessary during my absence from the City from 8:00 a.m. to 5:00 p.m., Thursday, September 29, 1994.

NAB:mr



JAMES E. BENNETT
Assistant Aviation Director

c Jack Tevlin
Aviation Comm Center
Deputy Aviation Directors



GROWTH

Growth Environmental Services, Inc.

Phoenix District
4041 N. Central Avenue, Suite 1050
Phoenix, AZ 85012-3393
602-248-8808
602-248-7722 Fax

March 1, 1995

Mr. J. L. Moeller
Manager, Contracts
Southern Pacific Lines
Southern Pacific Building
One Market Plaza
San Francisco, California 94105

SUBJECT: ADVANCE NOTICE OF SITE VISIT FOR ENVIRONMENTAL ASSESSMENT FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY BULLARD WASH OUTFALL PROJECT, LITCHFIELD CROSSING, FCD PARCEL NO . WT10-22, PER RIGHT-OF-ENTRY EASEMENT AND AGREEMENT FOR FLOOD CONTROL PURPOSES

Dear Mr. Moeller:

Growth Environmental Services, Inc. (GES) has been retained by the Flood Control District of Maricopa County to perform a Phase I Environmental Assessment (ESA) at the Railroad's property at or near Litchfield Junction, in Maricopa County, Arizona as part of the Bullard Wash Outfall Study Project Right of Entry Permit previously granted by Southern Pacific Lines. The study area is shown on the attached Railroad's Drawing No. R-886.1. In accordance with the Right-of-Entry Agreement, the site visit will be conducted on Wednesday, March 8, 1995. No digging, excavation, drilling or sampling of material will be performed by GES employees during this assessment.

GES understands that only public roadways are to be used to cross the Railroad's tracks. No work will be performed, or equipment placed closer than twenty-five feet from the centerline of any track. GES understands all work will be done during daylight hours and that there will be no delay or interference with the operations of the Railroad.

Mr. J. L. Moeller
Notification for Phase I ESA Site Visit
Southern Pacific Lines Litchfield Crossing
FCD Parcel No.: WT10-22
Bullard Wash Outfall Project
Page 2 of 2
March 1, 1995

Suitable safety equipment for all personnel on site will be utilized, including safety shoes, hard hats and safety glasses, under certain circumstances. A Southern Pacific employee is welcome to accompany GES personnel while on site. Two GES employees will conduct the site visit. These will include two of the following individuals: Kim Chambers Bergsten, Corey S. Rowley, Bruce Campbell, Madeline Montilla-Humbert, John Bishop or Alan Thomas. These individuals will be prepared to identify themselves as

We are enclosing a copy of a Phase I Assessment Interview form which we request to be filled out by a knowledgeable Southern Pacific employee. GES requests that the interview form be returned by March 15, 1995.

If you would like any additional information please feel free to contact Mr. William Knight, Flood Control District of Maricopa County at 506-1501, or Alan Thomas or Kim Chambers Bergsten at Growth Environmental Services, Inc. Thank you very much for your assistance.

Sincerely,

GROWTH ENVIRONMENTAL SERVICES, INC.



Kim Chambers Bergsten
Environmental Scientist

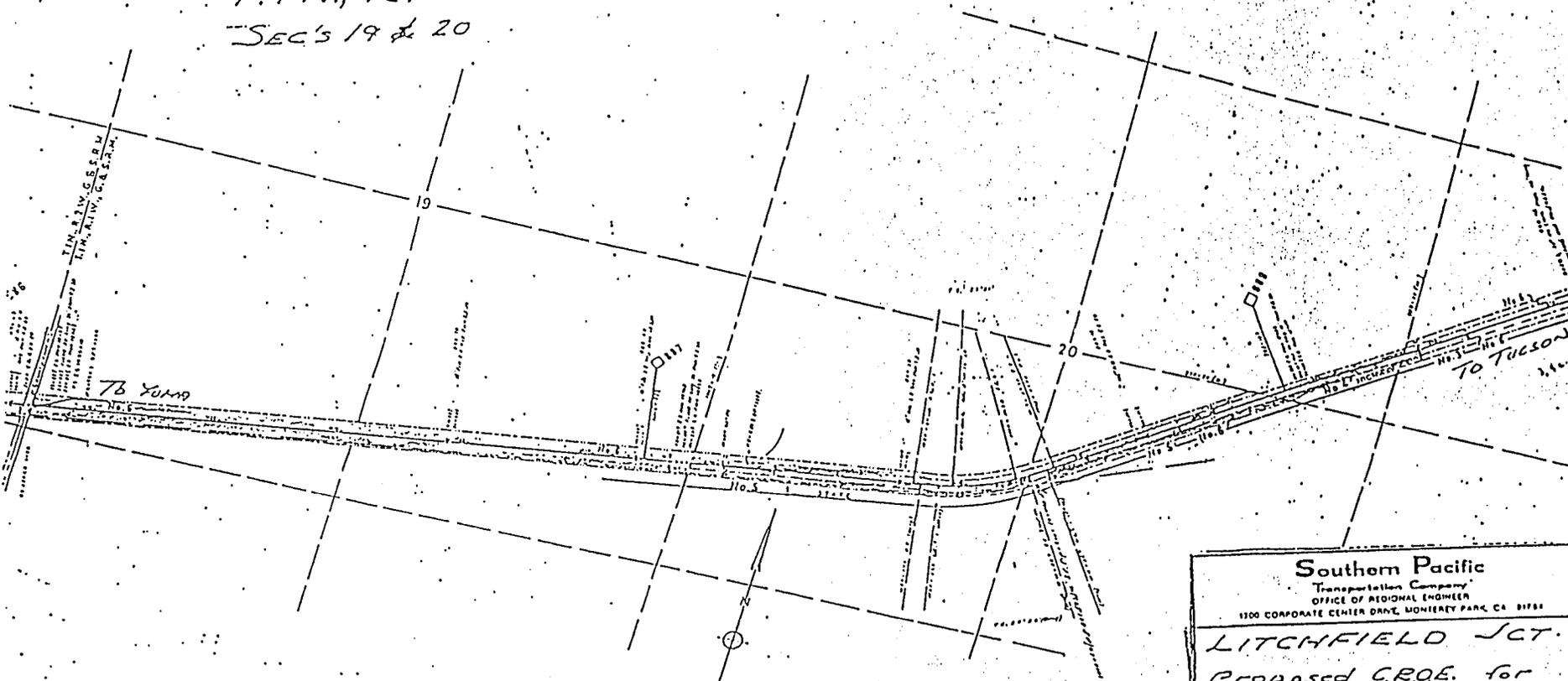


Alan C. Thomas
District Manager

Enclosures: Plat Map
Phase I Environmental Assessment
Interview Questions

cc: William Knight, Flood Control District
of Maricopa County
GES File AR390-1901

T. 1 N., R. 1 W.
 SEC'S 19 & 20



Legend

S. P. T. Co.
 Proposed C.R.O.E.

Southern Pacific
 Transportation Company
 OFFICE OF REGIONAL ENGINEER
 1100 CORPORATE CENTER DRIVE, MONTEREY PARK, CA 91754

LITCHFIELD JCT.
 Proposed C.R.O.E. for
 Maricopa County F.C.D.

SCALE 1" = 800'	EL PASO DIV.
VAL SEC 21 SHEET C	DRAWN BY
ROUTE NO R MP586.1	CHECKED BY
DATE AUG 19, 1994	DRAWING NO R-586.1
REVISED TO	SHEET NO.
	FILE DRAWER



RIGHT OF ENTRY PERMIT

Bullard Wash Outfall Study
FCD Parcel No. WT10-10, 22

Southern Pacific Lines

Southern Pacific Building • One Market Plaza • San Francisco, California 94105

J. L. Moeller
Manager-Contracts

"SPTCo"

310.1 * 53
September 19, 1994

Maricopa County Flood Control District
2801 West Durango Street
Phoenix, Arizona 85009

Dear Gentlemen:

Southern Pacific Transportation Company ("Railroad") subject to the following terms and conditions hereby permits Maricopa County Flood Control District ("District") to enter upon Railroad's property at or near Litchfield Jct., in the County of Maricopa, State of Arizona, for the purpose of performing surveying on property of Railroad incident to the Bullard Wash Outfall Study Project as shown on Railroad's Drawing No. R-886.1 hereby attached and made a part hereof.

District will pay Railroad partially to defray the cost of handling the sum of Seven Hundred Forty Dollars (\$740).

In performing said work District and/or its contractor's forces shall use only public roadways to cross from side of Railroad's tracks to the other. All work performed shall be no less than twenty-five (25) feet from the centerline of any track and at no time will cables or equipment of any nature be located less than twenty-five (25) feet from the centerline of any track.

All work shall be done during daylight hours only in a good and workmanlike manner at the sole cost and expense of District and to the satisfaction of Railroad. The tracks, communication lines and other facilities of Railroad will not be interfered with and the work will be so prosecuted that there will be no interference with or delay to the operations of Railroad.

District shall obtain written consent of any lessee, licensee or grantee of Railroad at the time in possession of any of the land included hereunder.

District agrees to reimburse Railroad for all costs and expense of Railroad in connection with said work, including but not limited to the furnishing of such inspector, watchman and flagman as Railroad deems necessary.

Upon completion of work covered hereunder, District will remove all equipment on Railroad's property and leave the property in a neat and safe condition satisfactory to Railroad.

District shall, at its expense, comply with all applicable laws, regulations, rules and orders regardless of when they become or became effective including without limitation those relating to health, safety, noise, environmental, protection, waste disposal and waste and air quality, and furnish satisfactory evidence of such compliance upon request of Railroad.

District agrees to and shall indemnify and hold harmless Railroad, its officers, agents, and employees from and against any and all claims, demands, losses, damages, causes of action, suits, and liabilities of every kind (including reasonable attorneys' fees, court costs, and other expenses related thereto) for injury to or death of a person or for loss of or damage to any property, arising out of or in connection with any work done, action taken or permitted by District, its subcontractors, agents or employees under this contract. It is the express intention of the parties hereto, both District and Railroad that the indemnity provided for in this paragraph indemnifies Railroad for its own negligence, whether that negligence is active or passive, or is the sole or a concurring cause of the injury, death or damage; provided that said indemnity shall not protect Railroad from liability for death, injury or damage arising solely out of the criminal actions of Railroad, its officers, agents and employees.

Permission herein given shall be effective only if accepted within one month from the date hereof, and if so accepted, shall be effective for a period of sixty (60) days thereafter. District agrees to notify Railroad's Regional Offices by letter on facsimile number (213) 780-6959 at least five days prior to entering on the premises of Railroad pursuant to this permission.

If the above terms and conditions are agreeable, please sign the enclosed duplicate original of this letter and forward same to Mr. J. W. Ivanusich, Contract Manager, Southern Pacific Transportation Company, 1200 Corporate Center Drive, Monterey Park, California 91754. After the notice is provided for above, you may exercise permission herein given.

Yours very truly,

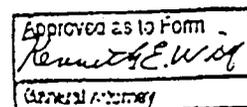
Janie L. Moeller

AGREED TO AND ACCEPTED

THIS ____ DAY OF _____, 1994.

MARICOPA COUNTY FLOOD CONTROL DISTRICT

By: See signature page attached hereto and made part hereof.
(Title)

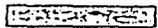


T. 1 N., R. 1 W.
 SEC'S 19 & 20



Legend

----- S. P. T. Co.



Proposed G.R.O.E.

Southern Pacific Transportation Company OFFICE OF REGIONAL ENGINEER 1200 CORPORATE CENTER DRIVE, MONTEREY PARK, CA 91754	
LITCHFIELD JCT. Proposed G.R.O.E. for Maricopa County F.C.D.	
SCALE 1" = 800'	EL PASO DIV.
VAL SEC 21 SHEET 6	DRAWN BY CHECKED BY
ROUTE NO R MP 886.1	DRAWING NO R-886.1
DATE Aug 19, 1994	SHEET NO.
REVISED TO	FILE DRAWER

MARICOPA COUNTY SPE. LETTER

FILE NO. WT 10-11, 23

TO HEDY HALL - LAND MANAGEMENT DIV., F.C.D.

FROM JOHN S. RODRIGUEZ - ENG./PERMITS, M.C.D.O.T.

SUBJECT BULLARD WASH OUTFALL PROJECT, RE: Right of Entry / Attachment DATE 10-7-94

MESSAGE
The intended work as described on attached sheet does not require a permit from our office, unless you are planning to cut the road or interrupt traffic which is not clearly stated.

SIGNED [Signature]

LY

SIGNED DATE

Typed: June 1, 1994

When recorded, return to:
Flood Control District
of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

TEMPORARY RIGHT-OF-ENTRY
EASEMENT AND AGREEMENT FOR FLOOD CONTROL PURPOSES

Project: Bullard Wash Outfall Project

Item: WT10-11, 23

Assessor's Parcel No.: 500-06,07-000

This Right-of-Entry Easement and Agreement is entered into this ___ day of _____, 1994, by and between the following parties, and shall become effective upon the acceptance by the Board of Directors of the Flood Control District.

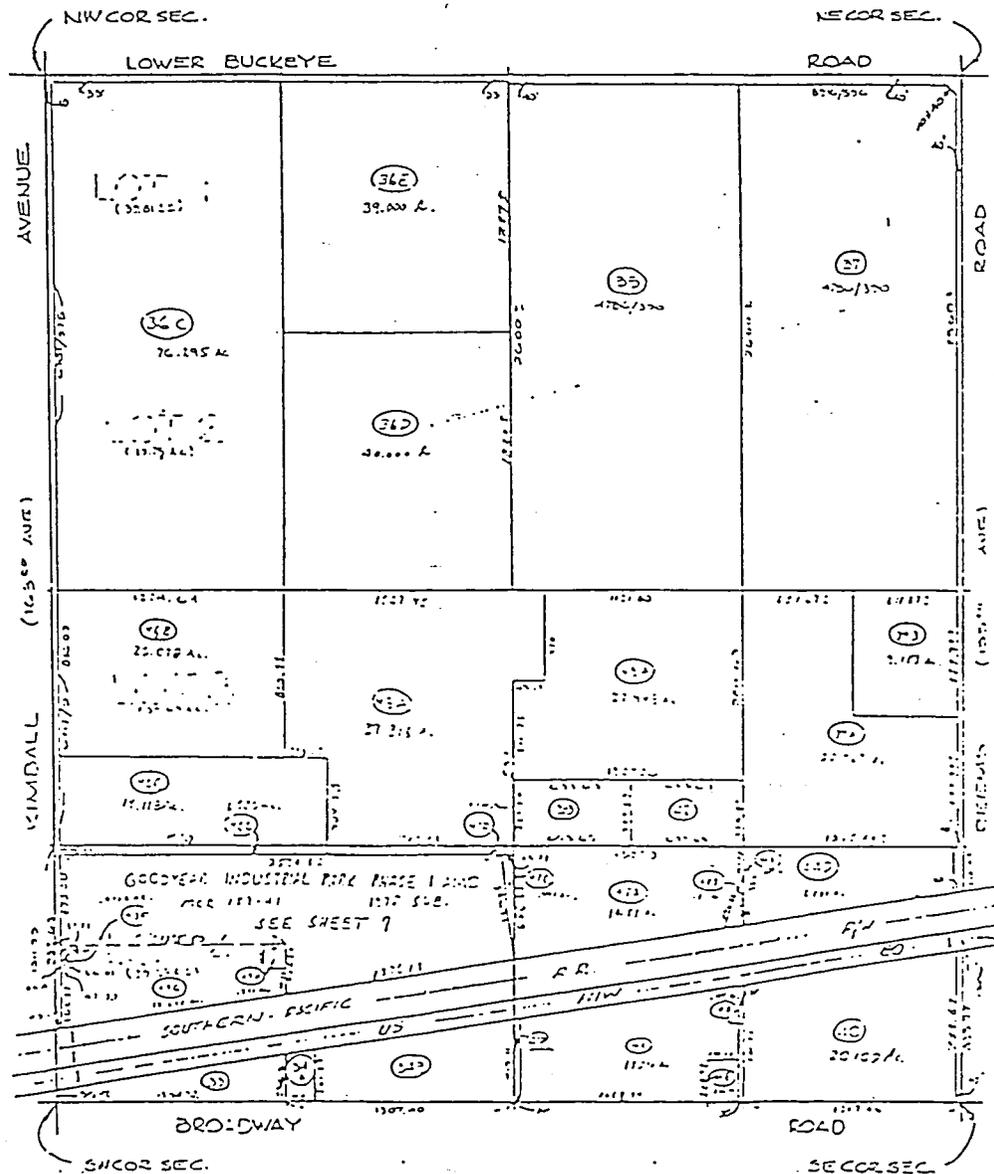
GRANTOR: MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION,
a municipal corporation, its successors and assigns.

GRANTEE: FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, a
municipal corporation and political subdivision of the State of Arizona,
its agents, contractors, successors, and assigns.

FOR AND IN CONSIDERATION of the sum of One and no/100 Dollars (\$1.00), and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, GRANTOR hereby grants and conveys to GRANTEE, a Right-of-Entry for the following purposes, namely: The right of ingress and egress to complete archaeological survey, environmental assessment, geotechnical investigation, vegetation inventory, and wildlife assessment, including all incidental purposes consistent therewith, on, over, under, and across the real property right-of-way as depicted on Exhibit "A", attached hereto and incorporated herein, and situated in the County of Maricopa, State of Arizona.

SEC. 19-IN, 1W

BOOK 500
MAP 6
SHEET 2





GROWTH
Growth Environmental Services, Inc.

Phoenix District
4041 N. Central Avenue, Suite 1050
Phoenix, AZ 85012-3393
602-248-8808
602-248-7722 Fax

February 15, 1995

Mr. James M. Balogh, Esq.
IMSALCO
34900 West Kent Drive
Chandler, Arizona 85226

SUBJECT: ADVANCE NOTICE OF SITE VISIT FOR ENVIRONMENTAL ASSESSMENT FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY BULLARD WASH OUTFALL PROJECT, ASSESSOR'S PARCEL NO. 500-07-018C, FCD PARCEL NO. WT10-28, PER RIGHT-OF-ENTRY EASEMENT AND AGREEMENT FOR FLOOD CONTROL PURPOSES

Dear Mr. Balogh:

Growth Environmental Services, Inc. (GES) has been retained by the Flood Control District of Maricopa County to perform a Phase I Environmental Site Assessment (ESA) at Assessor's Parcel No. 500-07-018C. Right of entry has previously been granted by IMSALCO. A copy of the plat map is attached. In accordance with the Right-of-Entry Agreement, the site visit will be conducted on Tuesday, March 7, 1995, at 10:00 a.m. GES will limit the site visit to the unimproved portions of the site unless specific written permission is granted by IMSALCO. No digging, excavation, drilling or sampling of material will be performed by GES employees during this assessment.

GES understands that suitable safety equipment is required for all personnel on site, including safety shoes, hard hats and safety glasses, under certain circumstances. GES requests permission to access the site and a knowledgeable IMSALCO employee to accompany GES personnel while on the site. Two GES employees will conduct the site visit. These will include two of the following individuals: Kim Chambers Bergsten, Corey S. Rowley, Bruce Campbell, Madeline Montilla-Humbert, John Bishop or Alan Thomas. These individuals will be prepared to identify themselves as GES employees.

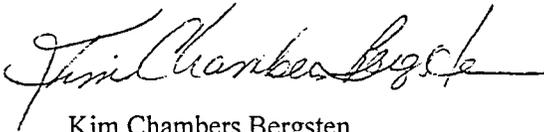
We are enclosing a copy of a Phase I Assessment Interview form which we request to be filled out by a knowledgeable IMSALCO employee.

Mr. James M. Balogh
Notification for Phase I ESA Site Visit
FCD Parcel No.: WT10-28
Bullard Wash Outfall Project
Page 2 of 2
February 15, 1995

If you would like any additional information please feel free to contact Mr. William Knight, Flood Control District of Maricopa County at 506-1501, or Alan Thomas or Kim Chambers Bergsten at Growth Environmental Services, Inc. Thank you very much for your assistance.

Sincerely,

GROWTH ENVIRONMENTAL SERVICES, INC.



Kim Chambers Bergsten
Environmental Scientist



Alan C. Thomas
District Manager

Enclosures: Plat Map
Phase I Environmental Assessment
Interview Questions

cc: William Knight, Flood Control District
of Maricopa County
GES File AR390-1901

SEC. 20-IN 1W

BOOK 500
MAP SHEET 7

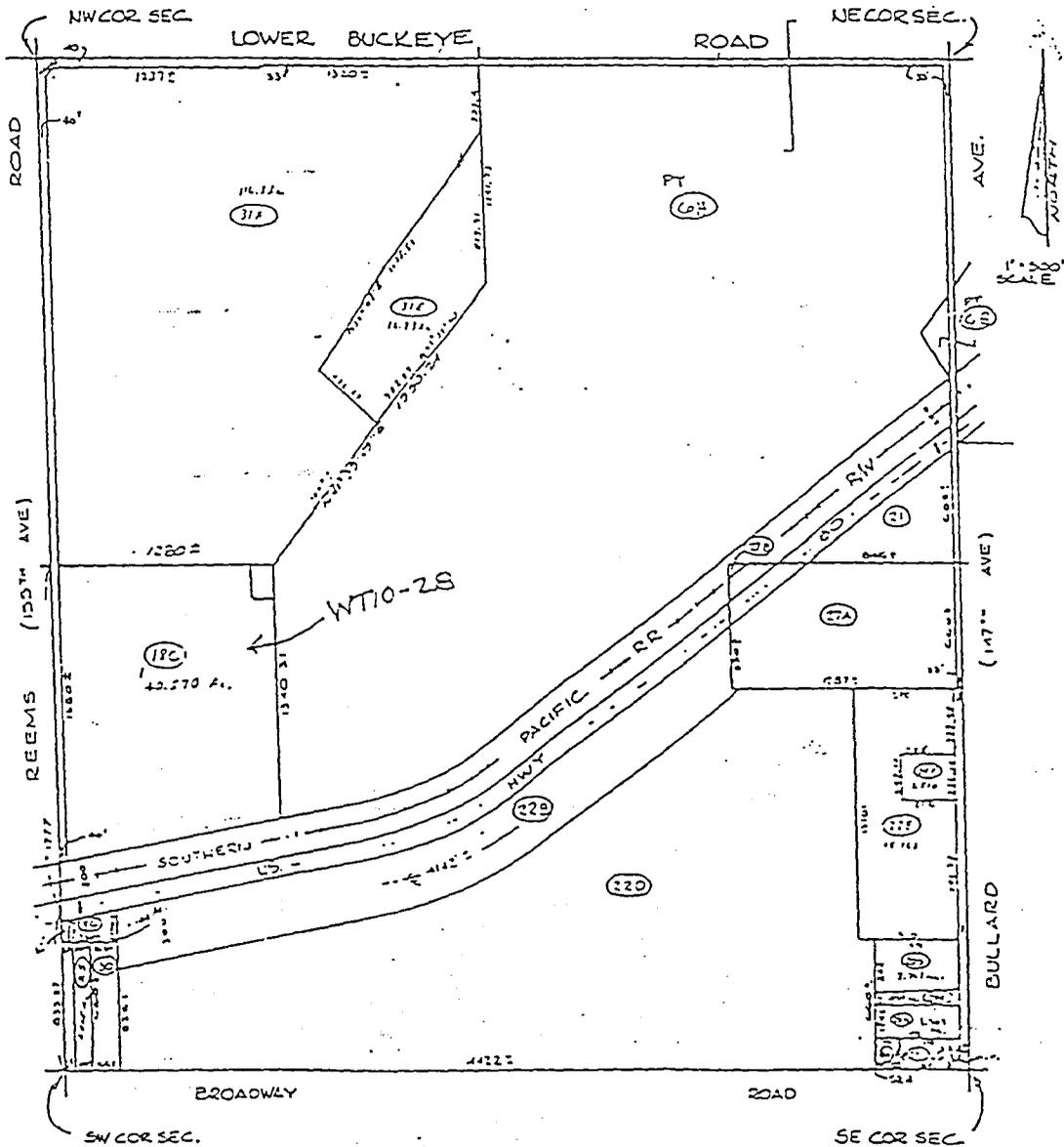


Exhibit "A" Page 1 of 1

Typed: September 8, 1994

When recorded, return to:
Flood Control District
of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

RIGHT-OF-ENTRY

EASEMENT AND AGREEMENT FOR FLOOD CONTROL PURPOSES

Project: Bullard Wash Outfall Project

FCD Parcel No: WT10-28

Assessor's Parcel No.: 500-07-018C

This Right-of-Entry Easement and Agreement is entered into this ___ day of _____, 1994, by and between the following parties, and shall become effective upon the acceptance by the Board of Directors of the Flood Control District.

GRANTOR: IMSALCO, an Arizona General Partnership, its successors and assigns.

GRANTEE: FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, a municipal corporation and political subdivision of the State of Arizona, its agents, contractors, successors, and assigns.

FOR AND IN CONSIDERATION of the sum of Five hundred and no/100 Dollars (\$500.00), and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, GRANTOR does hereby grant and convey to the GRANTEE, a Right-of-Entry for the following purposes, namely: the right of ingress and egress to complete archeological survey, environmental assessment, geotechnical investigation, vegetation inventory, and wildlife assessment, including all purposes consistent therewith, on, over, under, and across the real property right-of-way as depicted on Exhibit "A", attached hereto and incorporated herein, and situated in the County of Maricopa, State of Arizona.

(but in no event more than twenty (20) days prior to such date) GRANTEE shall deliver to GRANTOR prior written notice of the date, time, and number of persons who wish to enter the property, together with a specific description of the activities which will take place upon the property. GRANTEE, its officers, employees, agents and/or contractors shall wear suitable safety equipment while on the property, including, but not limited to, safety shoes, safety hard hats and safety glasses and shall allow GRANTOR'S employees to accompany all persons visiting the property. In no event shall GRANTEE, its officers, employees, agents and/or contractors do any digging, excavation, drilling or sampling of material on the property without the express prior consent of GRANTOR and Imsalco's General Manager.

GRANTOR does hereby covenant that it is granting this right of ingress and egress only to the extent of any interest it may have in the property.

This Right-of-Entry shall be for a term of 12 months from its effective date. Upon mutual written agreement, this instrument may be extended for an additional 6 months at the same monetary consideration, \$500.00.

All tools, equipment, supplies, and other personal property taken upon, or placed upon the land by GRANTEE, shall remain the property of GRANTEE, and shall be removed by GRANTEE at any time GRANTOR requests.

In the event any trees or shrubs are damaged, as a result of the rights granted, GRANTEE will replace with similar plantings or pay GRANTOR for such damages.

It is agreed and understood between the named parties, that GRANTEE will leave the land and real property within the area, subject to the agreement, in as near the same condition that it is now.

This Entry Agreement does not preclude the following rights of GRANTOR, namely; the right to grant and convey the real estate, the right to master plan and develop the real estate, and the right to cause construction upon the real estate as depicted on attached Exhibit "A", subject to all federal, state and local laws and ordinances with respect to environmental issues and land use, including, but not limited to floodplain regulations.

GRANTEE shall not commence the herein referenced studies upon any improved portions of the real property depicted on Exhibit "A", including, but not limited to, any portions which have been paved for

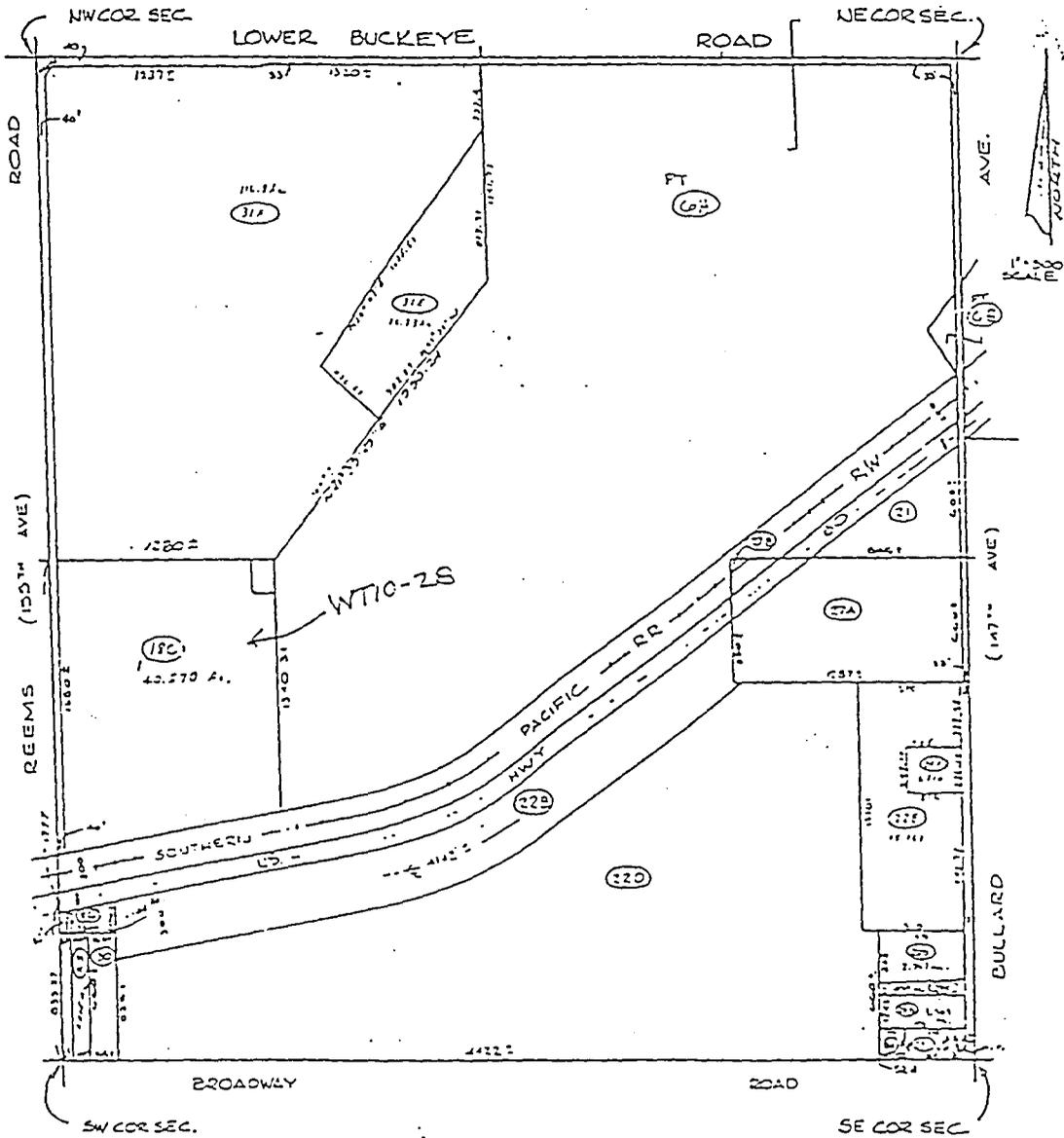


Exhibit "A" Page 1 of 1

James M. Balogh
Attorney
Member Arizona and Maryland Bars
3490 West Kent Drive
Chandler, Arizona 85226
(602) 732-1888
FAX (602) 732-0291

September 27, 1994

John P. Palmieri
Property Acquisition Coordinator
Land Management Division
2801 West Durango Street
Phoenix, Arizona 85009

Re: Imsalco Entry Agreement

Dear John:

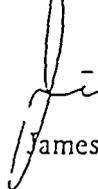
Enclosed is the Agreement executed by my client. Please have the appropriate parties on your side execute the Agreement and return a fully signed copy to me. Payment of the \$500.00 should be made directly to my client at Imsamet, 505 East Plaza Circle, Suite D, Litchfield Park, Arizona 85340, Attn: George Hanny.

Although I notarized my client's signature as you requested, please do not record the Agreement. As you know, my client does not own the property and therefore has no standing to encumber the property.

When you need to exercise the rights set forth in the Agreement, your point of contact at Imsalco is Jack Loss, General Manager. You may contact him by phone at 247-5560. His mailing address is P.O. Box 1233, Goodyear, Arizona 85338. By this letter, I am requesting that a copy of all communications and notices sent to Mr. Loss also be sent to this office at the above address.

If you have any questions, please call

Sincerely,

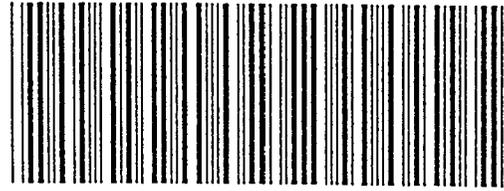

James M. Balogh

JB/jb

Enclosure: 1

cc: George Hanny
Jack Loss

FLOOD CONTROL DISTRICT	
RECEIVED	
SEP 28 '94	
CHENG	P & PM
DEP	HYDRO
ADMIN	LMGT
FINANCE	FILE
C & O	J P P
ENGR	
REMARKS	



OFFICIAL RECORDS OF
MARICOPA COUNTY RECORDER
HELEN PURCELL

94-0621352 08/18/94 02:55

LILIAN 2 OF 6

Typed: May 31, 1994

When recorded, return to:
Flood Control District
of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

Exempt 1.13

RIGHT-OF-ENTRY

EASEMENT AND AGREEMENT FOR FLOOD CONTROL PURPOSES

Project: Bullard Wash Outfall Project

FCD Parcel No: WT10-5, 30

Assessor's Parcel No.: 500-07-015A, 017D, 031F

This Right-of-Entry Easement and Agreement is entered into this 24 day of June, 1994, by and between the following parties, and shall become effective upon the acceptance by the Board of Directors of the Flood Control District.

GRANTOR: WOOD FAMILY ENTERPRISES LIMITED PARTNERSHIP, an Arizona limited partnership, its successors and assigns.

GRANTEE: FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, a municipal corporation and political subdivision of the State of Arizona, its agents, contractors, successors, and assigns.

FOR AND IN CONSIDERATION of the sum of Five hundred and no/100 Dollars (\$500.00), and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, GRANTOR does hereby grant and convey to the GRANTEE, a Right-of-Entry for the following purposes, namely: the right of ingress and egress to complete archeological survey, environmental assessment, geotechnical investigation, vegetation inventory, and wildlife assessment, including all purposes consistent therewith, on, over, under, and across the real property right-of-way as depicted on Exhibit "A", attached hereto and incorporated herein, and situated in the County of Maricopa, State of Arizona.

GRANTOR does hereby covenant that it is granting this Right-of-Entry only to the extent of any interest it may have in the property.

This Right-of-Entry shall be for a term of 12 months from its effective date. Upon mutual written agreement, this instrument may be extended for an additional 12 months at the same monetary consideration, \$500.00.

All tools, equipment, supplies, and other personal property taken upon, or placed upon the land by GRANTEE, shall remain the property of GRANTEE, and may be removed by GRANTEE at any time within the period of this Right-of-Entry.

In the event any trees or shrubs within the right-of-way area are damaged, as a result of the rights granted, GRANTEE will replace with similar plantings or pay GRANTOR for such damages.

It is agreed and understood between the named parties, that GRANTEE will leave the land within the right-of-way area in as near the same condition that it is now.

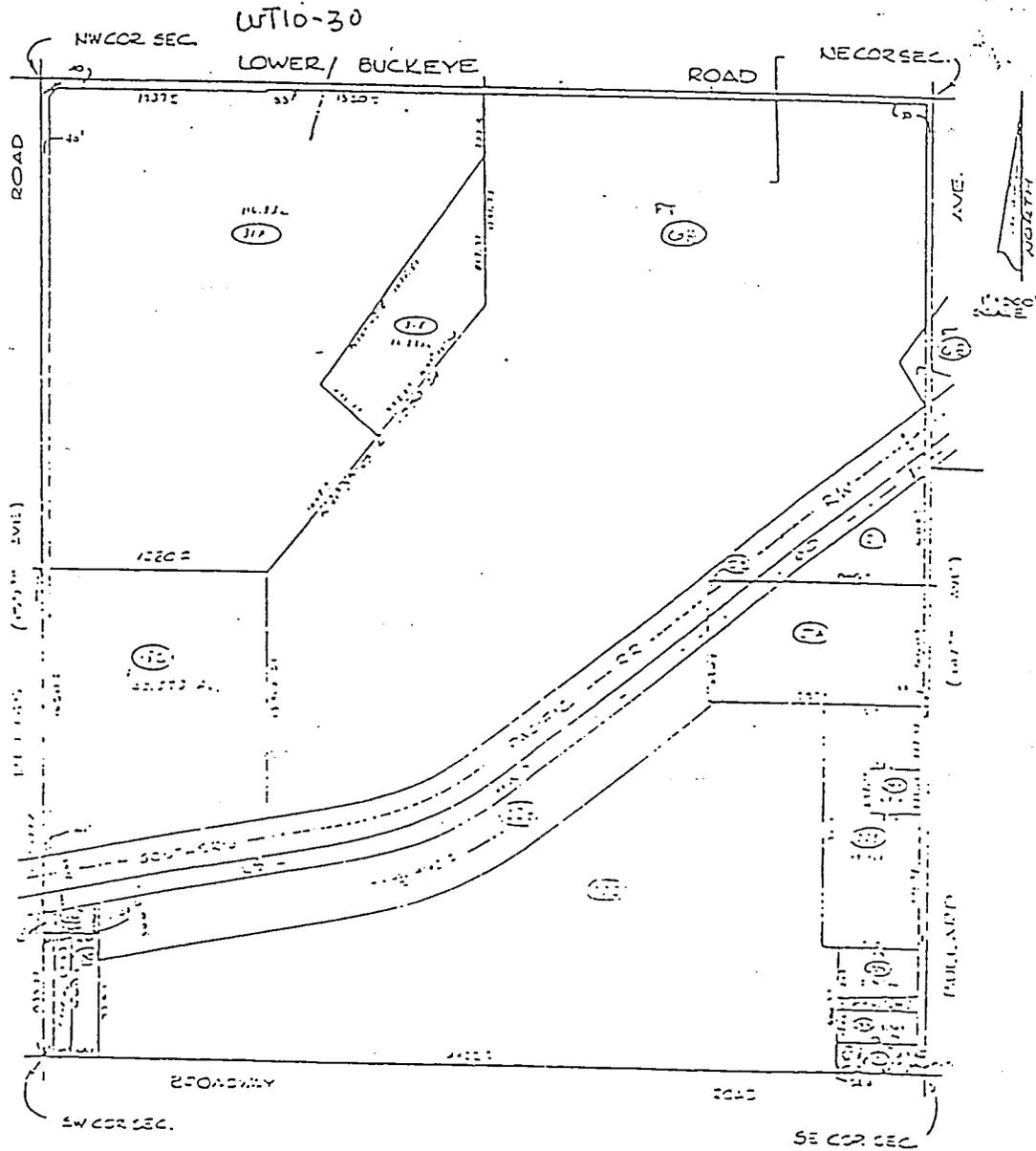
This Right-of-Entry does not preclude the following rights of GRANTOR, nameiy; the right to grant and convey the real estate, the right to master plan and develop the real estate, and the right to cause construction upon the real estate as depicted on attached Exhibit "A", subject to all federal, state and local laws and ordinances with respect to environmental issues and land use, including, but not limited to floodplain regulations.

GRANTEE shall not commence the herein referenced studies upon any improved portions of the real property depicted on Exhibit "A", including, but not limited to, any portions which have been paved for vehicular traffic or parking, or upon which a building or other structural improvement has been constructed, created, or situated (an "Improvement") without written permission of GRANTOR.

GRANTEE agrees to indemnify GRANTOR for all direct damages to the real property, personal property, or physical injury to persons on the property of GRANTOR, as described in Exhibit "A", caused by or arising from the proximate result of the activities of GRANTEE, its officers, employees, agents or contractors in the exercise of GRANTEE'S rights pursuant to the terms of this Right-of-Entry.

SEC. 20-IN IW

BOOK 500
MAP SHEET 7





GROWTH
Growth Environmental Services, Inc.

Phoenix District
4041 N. Central Avenue, Suite 1050
Phoenix, AZ 85012-3393
602-248-8808
602-248-7722 Fax

March 1, 1995

Mr. F. Ronald Rayner
A Tumbling T Ranches
P. O. Box 1509
Goodyear, AZ 85338

SUBJECT: ADVANCE NOTICE OF SITE VISIT FOR ENVIRONMENTAL ASSESSMENT FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY BULLARD WASH OUTFALL PROJECT, ASSESSOR'S PARCEL NOS. 500-07-022B, 022D; 500-81-4E (FCD PARCEL NOS. WT10-25, 37 AND 38) PER RIGHT-OF-ENTRY EASEMENT AND AGREEMENT FOR FLOOD CONTROL PURPOSES

Dear Mr. Rayner:

Growth Environmental Services, Inc. (GES) has been retained by the Flood Control District of Maricopa County to perform a Phase I Environmental Assessment (ESA) at a portion of Assessor's Parcel Nos. 500-07-022B, 022D and 500-81-4E (FCD Parcel Nos. WT10-25, 37 and 38). Right of entry has previously been granted by Equitable Variable Life Insurance Company. A copy of the plat map is attached. In accordance with the Right-of-Entry Agreement, the site visit will be conducted on Wednesday, March 8, 1995. No digging, excavation, drilling or sampling of material will be performed by GES employees during this assessment.

GES understands that the right-of-way consists of an area approximately 400 feet in width running south from State Route 85 to the White Tanks Canal, approximately 1080 feet east of Reems Road (Estrella Parkway) and that the property may currently be farmed. Extreme care will be taken by GES personnel to not damage any trees, shrubs or active cultivation. No GES vehicle will be allowed on the property.

Suitable safety equipment for all personnel on site will be utilized, including safety shoes, hard hats and safety glasses, under certain circumstances. GES requests permission to access the site and a knowledgeable A Tumbling T Ranches employee to accompany GES personnel while on the site. Two GES employees will conduct the site visit. These will include two of the following individuals: Kim Chambers Bergsten, Corey S. Rowley, Bruce Campbell, Madeline Montilla-Humbert, John Bishop or Alan Thomas. These individuals will be prepared to identify themselves as GES employees.

Mr. F. Ronald Rayner
Notification for Phase I ESA Site Visit
FCD Parcel Nos.: WT-25, 37 and 38
Bullard Wash Outfall Project
Page 2 of 2
March 1, 1995

We are enclosing a copy of a Phase I Assessment Interview form which we request to be filled out by a knowledgeable A Tumbling T Ranches employee. GES requests that the interview form be returned by March 15, 1995.

If you would like any additional information please feel free to contact Mr. William Knight, Flood Control District of Maricopa County at 506-1501; or Alan Thomas or Kim Chambers Bergsten at Growth Environmental Services, Inc. Thank you very much for your assistance.

Sincerely,

GROWTH ENVIRONMENTAL SERVICES, INC.



Kim Chambers Bergsten
Environmental Scientist



Alan C. Thomas
District Manager

Enclosures: Plat Map
Phase I Environmental Assessment
Interview Questions

cc: William Knight, Flood Control District
of Maricopa County
GES File AR390-1901

SECTION IN W

BOOK 500
PAGE 7

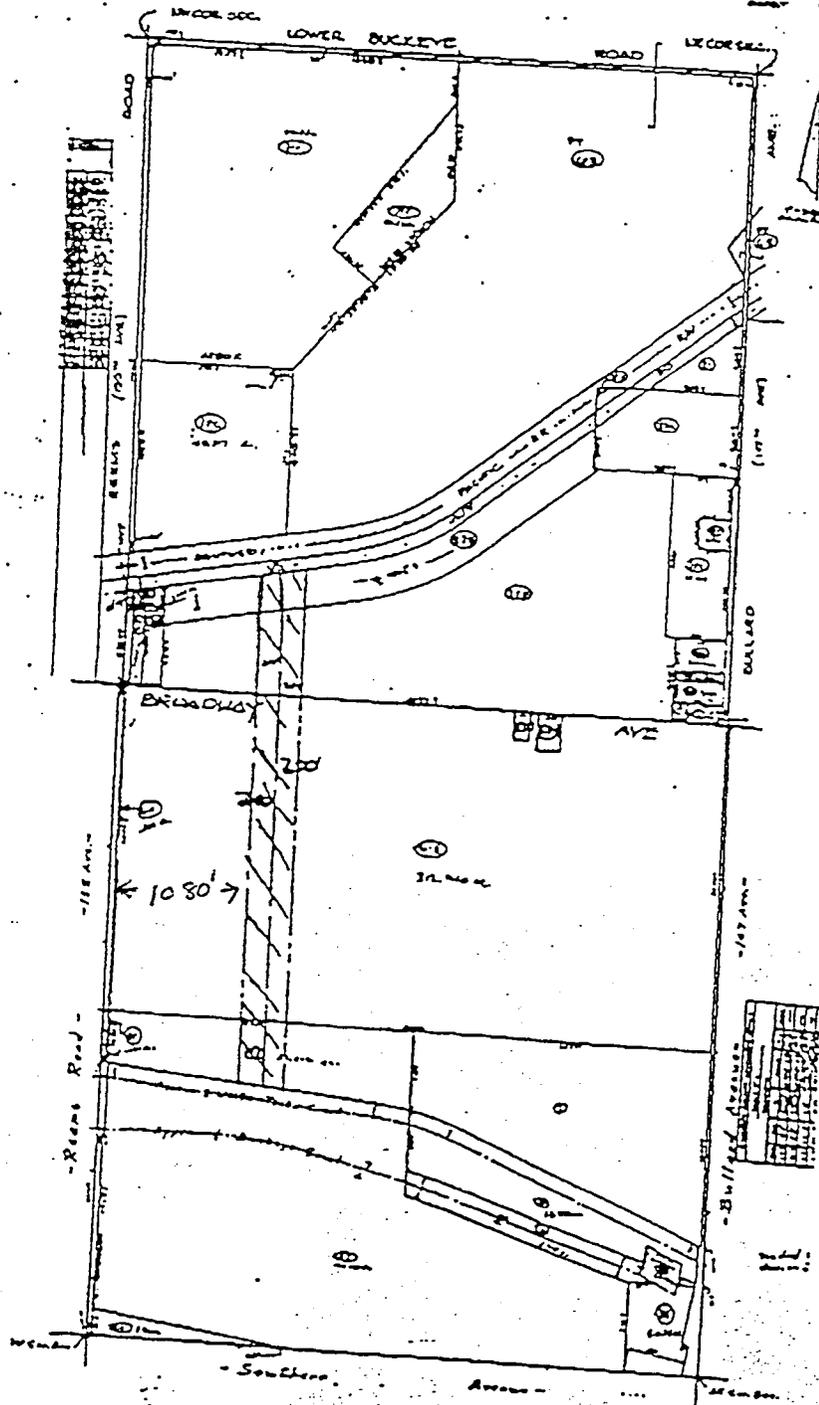


Exhibit "A" Page 1 of 1

Typed: ~~{1/17/95}~~ ~~{1/23/95}~~

When recorded, return to:
 Flood Control District
 of Maricopa County
 2801 West Durango Street
 Phoenix, Arizona 85009

**RIGHT-OF-ENTRY
 EASEMENT AND AGREEMENT FOR FLOOD CONTROL PURPOSES**

Project: Bullard Wash Outfall Project
 FCD Parcel No: WT10-25, 37, 38
 Assessor's Parcel Nos.: 500-07-022B,
 022D; 500-81-4E, ~~{4F, 6B, 6D,}~~ 6E, ~~6F~~.

This Right-of-Entry Easement and Agreement is entered into this ___ day of ~~January~~, 1995, by and between the following parties, and shall become effective upon the GRANTOR'S signature.

GRANTOR: **EQUITABLE VARIABLE LIFE INSURANCE COMPANY**, a New York ~~{Corporation}~~ ~~{Corporation}~~, its successors and assigns.

GRANTEE: **FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**, a municipal corporation and political subdivision of the State of Arizona, its agents, contractors, successors, and assigns.

FOR AND IN CONSIDERATION of the sum of One Thousand and no/100 Dollars (\$1,000.00), and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, GRANTOR does hereby grant and convey to the GRANTEE, a Right-of-Entry for the following purposes, namely: the right of ingress and egress to complete archeological survey, environmental assessment, and vegetation inventory, including all purposes consistent therewith, on, over, ~~under,~~ and across the real property right-of-way ~~{approximately 400 feet in width running south from State Route 85 (formerly U.S. Hwy. 89) to the White Tanks Canal and as depicted on Exhibit "A", attached hereto and incorporated herein, and situated in the County of Maricopa, State of Arizona.~~

The foregoing Right-of-Entry purposes granted to GRANTEE shall involve surface activities only. Should GRANTEE find a need for any core sampling of the real property, prior written permission from the GRANTOR must be obtained, which permission shall not be unreasonably withheld.

GRANTOR does hereby covenant that it is granting this Right-of-

Entry only to the extent of any interest it may have in the property.

This Right-of-Entry shall be for a term of 3 months from its effective date. Upon mutual written agreement, this instrument may be extended for an additional 3 months at no additional monetary consideration.

All tools, equipment, supplies, and other personal property taken upon, or placed upon the land by GRANTEE, shall remain the property of GRANTEE, and may be removed by GRANTEE at any time within the period of this Right-of-Entry.

In the event any trees or shrubs ~~are crops~~ within the right-of-way area are damaged, as a result of the rights granted, GRANTEE will replace with similar plantings or pay GRANTOR for such damages.

It is agreed and understood between the named parties, that GRANTEE will leave the land within the right-of-way area in as near the same condition that it is now.

This Right-of-Entry does not preclude the following rights of GRANTOR, namely: the right to ~~farm or for its tenant of the real estate, to hunt, trap, fish, or to otherwise use the real estate, to cultivate crops and to otherwise follow normal farming practices,~~ the right to grant and convey the real estate, the right to master plan and develop the real estate, and the right to cause construction upon the real estate as depicted on attached Exhibit "A", subject to all federal, state and local laws and ordinances with respect to environmental issues and land use, including, but not limited to floodplain regulations. ~~GRANTEE agrees to contact ATT for permission to commence any survey, assessment or inventory 5 days in advance. The address, telephone and fax number of ATT is as follows:~~

A. Tombling Ranches
Attn: Er. Ronald Rayder
P.O. Box 1525
Goodyear, Arizona 85338
Telephone: 602/832-1834
Facsimile: 602/832-3170

Rayder
602/832-1834

GRANTEE shall not commence the herein referenced studies upon any improved portions of the real property depicted on Exhibit "A", including, but not limited to, any portions which have been paved for vehicular traffic or parking, or upon which a building or other structural improvement has been constructed, created, or situated ~~{(an "Improvement")}~~ without written permission of GRANTOR.

~~GRANTEE agrees to pay and reimburse GRANTOR the sum of \$1,000 for GRANTOR's attorney's fees incurred in connection with GRANTOR's execution and delivery of this Right-of-Entry. GRANTEE further~~

Jim L. Schwartzmann Date
Chief, Land Management Division

ATTEST:

Clerk of the Board

Date: _____

SEC 20-IN N

BOOK 300
P. 7

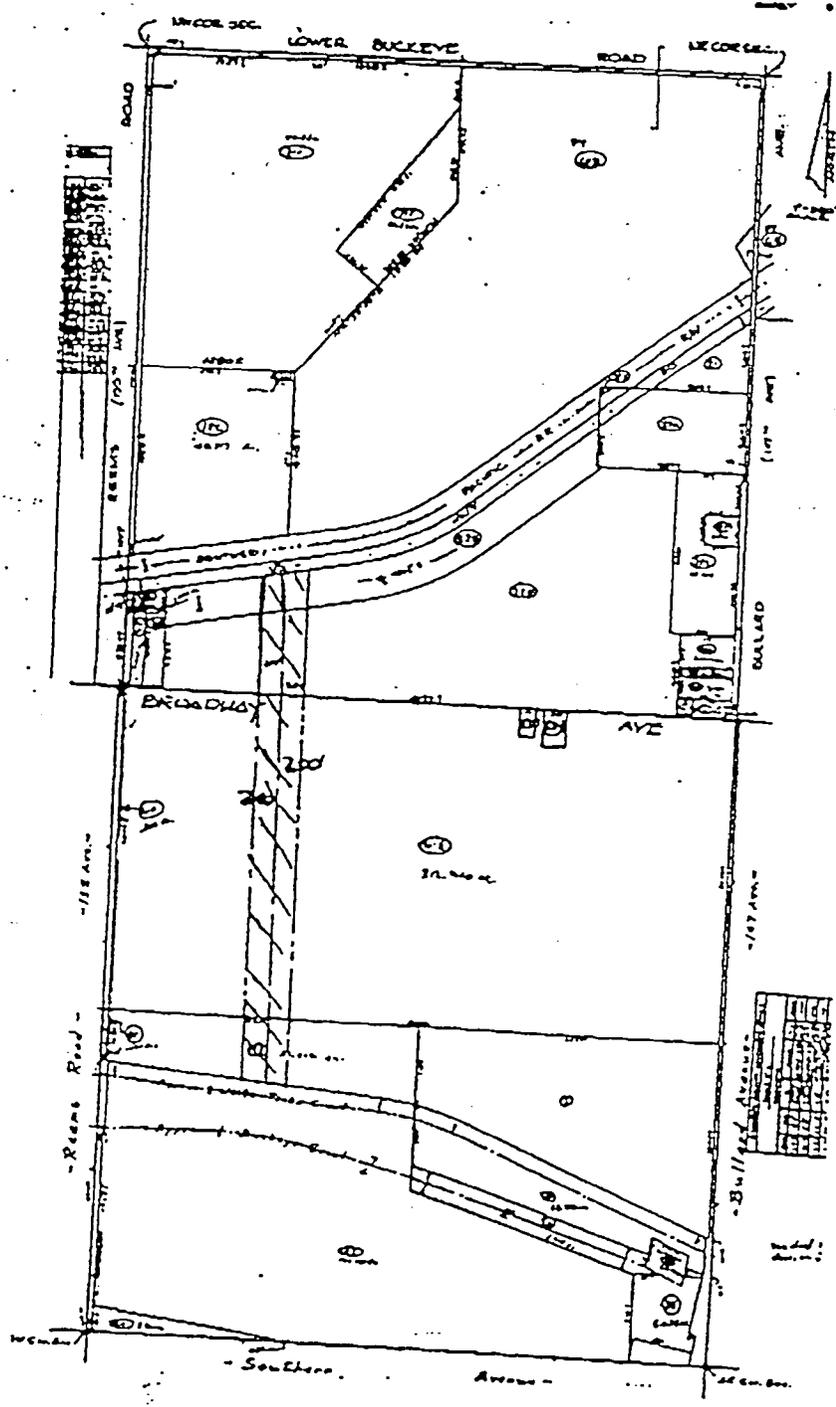


Exhibit "A" Page 1 of 1

WT10-34, 40



OFFICIAL RECORDS OF
MARICOPA COUNTY RECORDER
HELEN PURCELL
94-0707514 09/28/94 02:50
LILIAN 1 OF 1

Typed: May 31, 1994

When recorded, return to:
Flood Control District
of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

Exempt A-3

**RIGHT-OF-ENTRY
EASEMENT AND AGREEMENT FOR FLOOD CONTROL PURPOSES**

Project: Bullard Wash Outfall Project
FCD Parcel No: WT10-34, 35, 40
Assessor's Parcel No.: 500-81-004J, 500-83-001J

This Right-of-Entry Easement and Agreement is entered into this 12 day of July, 1994, by and between the following parties, and shall become effective upon the acceptance by the Board of Directors of the Flood Control District.

GRANTOR: BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT, its successors and assigns.

GRANTEE: FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, a municipal corporation and political subdivision of the State of Arizona, its agents, contractors, successors, and assigns.

FOR AND IN CONSIDERATION of the sum of Five hundred and no/100 Dollars (\$500.00), and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, GRANTOR does hereby grant and convey to the GRANTEE, a Right-of-Entry for the following purposes, namely: the right of ingress and egress to complete archeological survey, environmental assessment, geotechnical investigation, vegetation inventory, and wildlife assessment, including all purposes consistent therewith, on, over, under, and across the real property right-of-way as depicted on Exhibit "A", attached hereto and incorporated herein, and situated in the County of Maricopa, State of Arizona.

GRANTOR does hereby covenant that it is granting this Right-of-Entry only to the extent of any interest it may have in the property.

This Right-of-Entry shall be for a term of 12 months from its effective date. Upon mutual written agreement, this instrument may be extended for an additional 12 months at the same monetary consideration, \$500.00.

All tools, equipment, supplies, and other personal property taken upon, or placed upon the land by GRANTEE, shall remain the property of GRANTEE, and may be removed by GRANTEE at any time within the period of this Right-of-Entry.

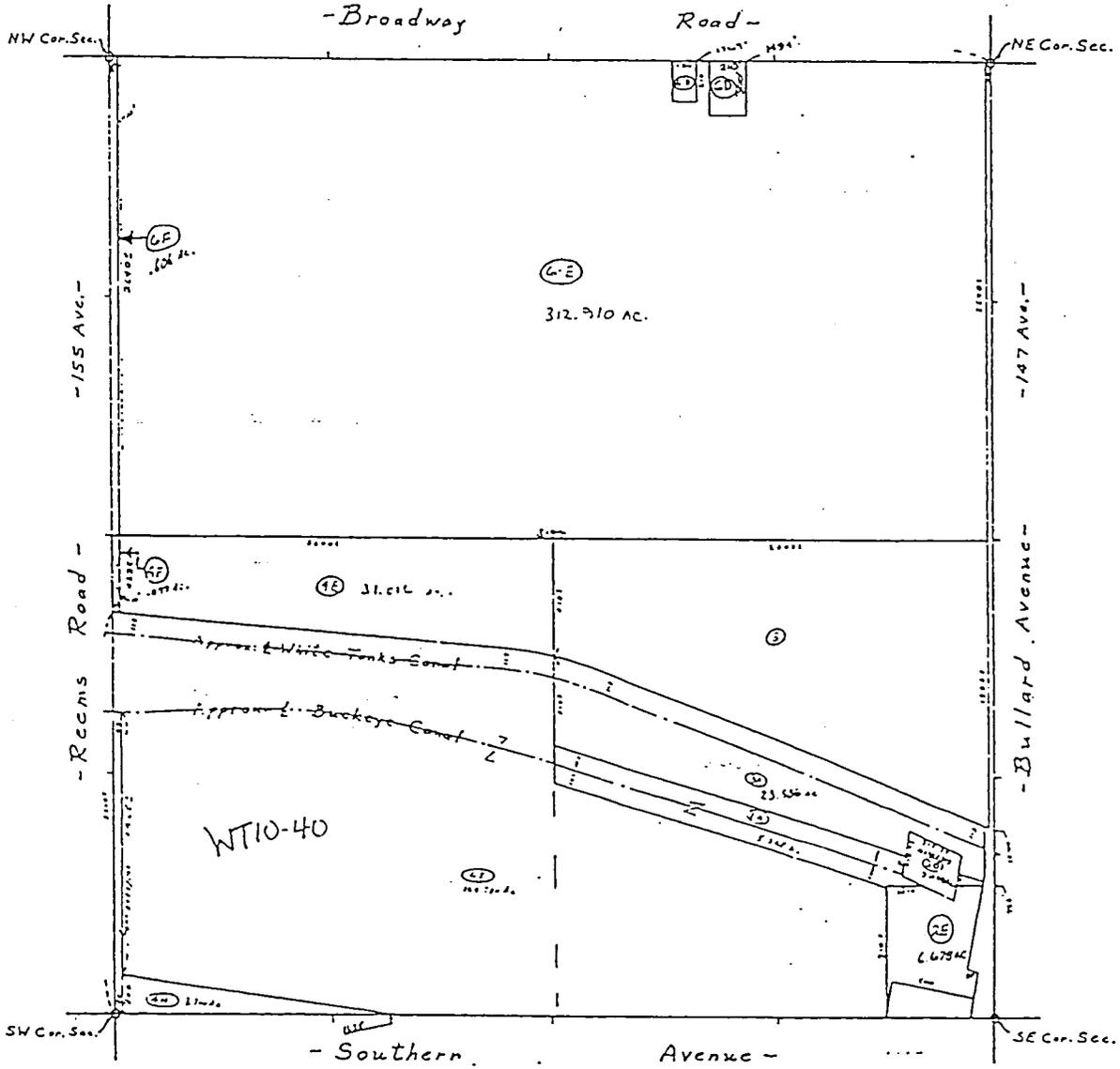
In the event any trees or shrubs within the right-of-way area are damaged, as a result of the rights granted, GRANTEE will replace with similar plantings or pay GRANTOR for such damages.

It is agreed and understood between the named parties, that GRANTEE will leave the land within the right-of-way area in as near the same condition that it is now.

This Right-of-Entry does not preclude the following rights of GRANTOR, namely; the right to grant and convey the real estate, the right to master plan and develop the real estate, and the right to cause construction upon the real estate as depicted on attached Exhibit "A", subject to all federal, state and local laws and ordinances with respect to environmental issues and land use, including, but not limited to floodplain regulations.

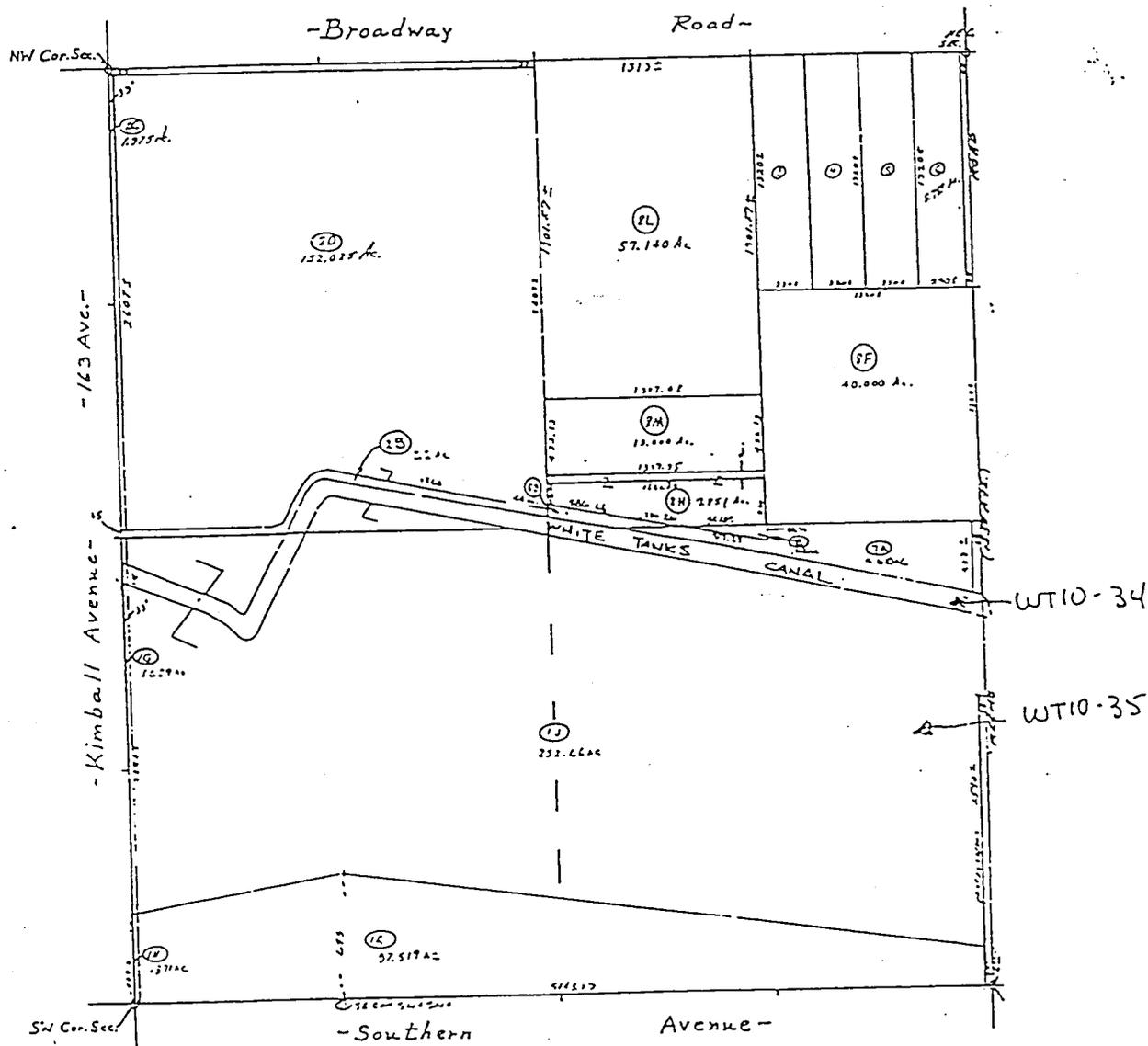
GRANTEE shall not commence the herein referenced studies upon any improved portions of the real property depicted on Exhibit "A", including, but not limited to, any portions which have been paved for vehicular traffic or parking, or upon which a building or other structural improvement has been constructed, created, or situated (an "Improvement") without written permission of GRANTOR.

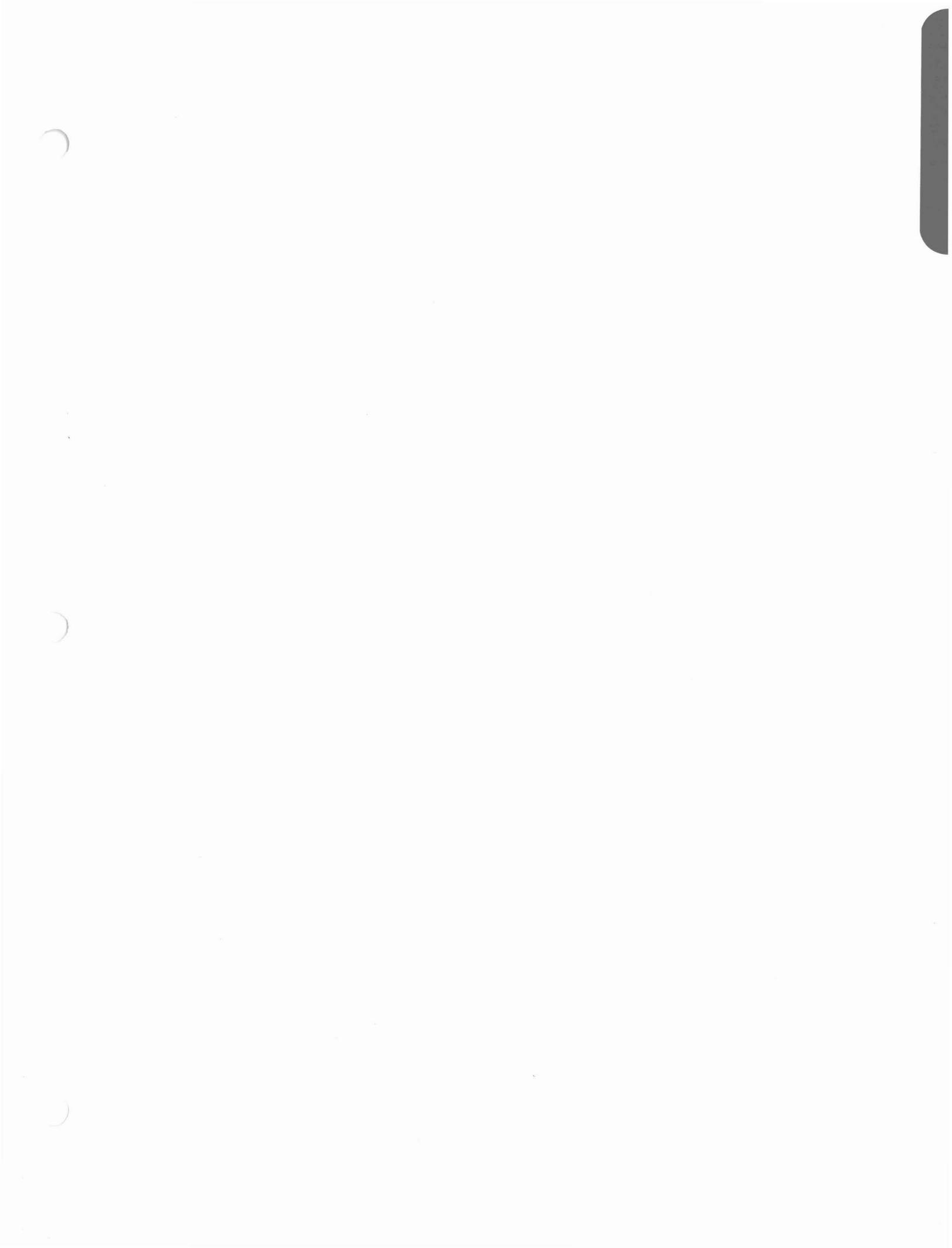
GRANTEE agrees to indemnify GRANTOR for all direct damages to the real property, personal property, or physical injury to persons on the property of GRANTOR, as described in Exhibit "A", caused by or arising from the proximate result of the activities of GRANTEE, its officers, employees, agents or contractors in the exercise of GRANTEE'S rights pursuant to the terms of this Right-of-Entry.



Sec. 30 - INIW

Book 500 Map 83





APPENDIX D
INTERVIEW DOCUMENTATION

PHASE I ENVIRONMENTAL ASSESSMENT INTERVIEW QUESTIONS

CONTACT NAME, ADDRESS, AND PHONE NUMBER:

Rosemary Ware (602) 273-8881
City of Phoenix Aviation-Department
3400 Sky Harbor Boulevard, Phoenix, AZ 85034-4403

CONTACTS RELATIONSHIP TO THE SUBJECT PROPERTY:

Airports Property Agent
City of Phoenix Aviation Department

INFORMATION CONCERNING OTHER POSSIBLE INTERVIEW SUBJECTS:

Discovery West Ranch Partners (Current Lessee)
Wood Family Enterprises Limited Partnership (Previous Land Owner)

1. Time Frame that contact has information about the subject property?

Four years. City of Phoenix acquired the subject 14.17 acres from Woods Family Enterprises Limited Partnership, an Arizona limited partnership, by Warranty Deed recorded 12/21/90 per Document No. 90-566515.

2. Current and former use of the subject property?

Agricultural.

3. Is the subject property on city sewer or a septic system? Have there ever historically been any septic systems located on the subject property?

Not to our knowledge.
Not to our knowledge.

4. Who provides water to the subject property? Are there any wells located on the subject property?

Roosevelt Irrigation District.
Not to our knowledge.

5. Who provides electricity to the subject property? Are there any transformers or florescent lighting ballasts on the subject property that may contain PCBs? Have any of the transformers or ballasts exploded or leaked?

Arizona Public Service Company's area.
Not to our knowledge.
Not to our knowledge.

6. Who provides sanitation to the subject property? Is there now or has there historically been any illicit disposal activities on the subject property or in the immediate area surrounding the subject property?

Unknown (Town of Goodyear area).

See Attachments A, B, C, D, E and F; see also Goodyear Tire & Rubber Record of Decision and Superfund Reports.

7. Who provides gas to the subject property?

Unknown (Southwest Gas area).

8. What is the total size of the subject property? Can contact physically or verbally define the boundaries of the subject property?

14.175 acres.

No, metes and bounds legal description (see Attachment G).

9. Can contact describe the number and type of structures present on the subject property? What are the current and historical uses of the structures present on the property?

N/A

Unknown.

10. Was the property ever utilized as agricultural land? What types of crops were grown? Were pesticides or herbicides utilized on the subject property to any degree? How much and what kind?

Yes, currently leased to Discovery West Ranch Partners.

Cotton.

Yes, see Attachment I.

11. Are there currently or have there historically been underground or aboveground storage tanks on the subject property? How many, Fuel type, Capacity, Fuel use, installation date, tank construction, piping type, tank tightness testing?

Unknown (tanks on airport only).

12. Has there been any significant storage, usage or disposal of chemicals or other hazardous substances on the subject property? Have there been any spills, leaks or other hazardous materials incidents on the subject property or in the immediate area surrounding the subject property?

Unknown.

See Attachments A, B, C, D, E and F; see also Goodyear Tire & Rubber Record of Decision and Superfund Reports.

13. What types of properties or facilities have been located in the immediate area surrounding the subject property?

Agriculture. Also see Attachment A History.

14. What is the general drainage pattern on the subject property? Is there any improved drainage installed? Are there any drywells or sumps located on the subject property?

Drainage to southwest via laterals in Roosevelt Irrigation District system.

15. Does the contact have any maps or drawings of the subject property? Does the contact have any permits or waivers for activities that may take place on the subject property?

See #6.

16. Does contact know of any unusual features about the property, ie. unidentified pipes, depressions, stains etc?

No.

17. Is the contact aware of any asbestos containing materials or prior asbestos abatement activities that may have taken place on the subject property?

No.

18. Has there been any Radon testing accomplished on the subject property? Have Radon mitigation units ever been installed on the subject property?

Unknown.

No.

19. Is the contact aware of any landfills or areas of heavy dumping close to the subject property?

Yes, to the south. IMSALCO.

20. Have there been any liens placed against the property for environmental or health and safety concerns?

Unknown.

NOTES OR SKETCHES

Clean-up Activities

Phoenix-Goodyear Airport

The Goodyear Tire & Rubber Company

History

The Phoenix-Goodyear Airport served as the Litchfield Park Naval Air Facility beginning in World War II. During the war, The Goodyear Tire & Rubber Company also began operating Goodyear Aerospace at the airport, modifying and repairing aircraft, which were then transferred to the adjoining Naval Air Facility.

The Naval Air Facility was placed in modified maintenance status in 1946. Its primary function became the preservation and activation of military aircraft. Subsequently, up to 2,000 aircraft were preserved annually at the Naval Air Facility. In 1968, the Navy transferred ownership of the property to the City of Phoenix. Loral Systems Group, a division of Loral Corporation, purchased Goodyear Aerospace in 1987.

The U.S. Navy and Goodyear Aerospace used trichloroethylene (TCE), a common industrial solvent, as part of aircraft maintenance and modification operations. Goodyear Aerospace discontinued using TCE in 1974 at the site, when the U.S. government published reports that TCE chemically reacted to sunlight and became a major contributor to smog.

Waste management practices during World War II and in the years to follow by the Navy, Goodyear Aerospace, and another defense-related company at the airport were acceptable at the time, but led to the present environmental problems.

While the City of Goodyear drinking water is and has consistently been safe to drink, groundwater sampling in the Phoenix-Goodyear Airport area in 1981 indicated the presence of volatile organic compounds, primarily TCE, and chromium, a metal used in plating operations.

The U.S. EPA placed the airport site on the National Priorities List of contaminated areas targeted for investigation and cleanup in 1983. Since then, The Goodyear Tire & Rubber Company has cooperated with the U.S. EPA and state agencies to determine the extent and nature of the contamination problems relating to the southern portion of the Superfund site.

Clean-up Activities

Goodyear Tire has led clean-up activities on the southern portion of the site, starting in 1984 with a complete site investigation and an evaluation of the best suited cleanup methods.

An initial treatment system was designed in 1987 to clean TCE from the shallow groundwater, between 50 and 100 feet below-ground, and to protect the deep groundwater from further contamination. The shallow groundwater never has been suited for drinking water because of naturally-occurring solids. In 1989 Goodyear Tire began cleaning the shallow groundwater and reinjecting it into the aquifer. Since then over 500 million gallons of water have undergone treatment in this system, removing an estimated 70 gallons of TCE or 20 percent of the TCE estimated to exist in the shallow groundwater aquifer. The system, which incorporates 10 extraction wells, 16 reinjection wells and an enclosed air stripping tower to clean the water, and a carbon air filter system, continues to operate.

Other work completed by Goodyear Tire includes sealing old wells at the airport suspected of allowing TCE-contaminated water to seep into the deeper aquifer. Also, Goodyear Tire has completed the treatment of the old chromium sludge beds left many years ago from plating operations at the site.

Goodyear Tire estimates that the deep groundwater contains less than 10 gallons of TCE. Water pumped from the deep groundwater aquifer will be sent through enclosed carbon filtration systems located near the two water extraction wells on the airport property. The clean water will then be reinjected into the deep groundwater through a series of four wells. Construction of this system will begin this summer.

Additionally, Goodyear Tire began installing in February of this year below-ground piping that will be used to remove residual TCE vapors from the soil above the shallow groundwater at the airport. The TCE vapors will be withdrawn from the soil through this piping. The extracted vapors will then be cleaned in an enclosed carbon filtration system.

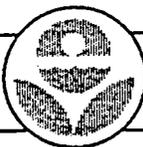
None of these clean-up activities poses a danger to human health.

As part of the long term groundwater monitoring effort on its portion of the site, Goodyear Tire will sample regularly 66 wells on and around the site.

For more information:

For The Goodyear Tire & Rubber Company
Kathy Hancock
(602) 277-6709

U.S.



ENVIRONMENTAL PROTECTION AGENCY, REGION 9

75 Hawthorne Street, San Francisco, CA 94105

PHOENIX-GOODYEAR AIRPORT SUPERFUND SITE

Public Meeting
Wednesday, March 10, 1993

Agua Fria High School
530 East Riley Drive
Avondale, Arizona

AGENDA

7:00 - 7:30

- Informational Open House

7:30 - 7:45

- Opening Remarks/
Introductions

Vicki Rosen,
Community Relations
Coordinator, EPA

7:45 - 8:30

- Site Clean-up Strategy

Past and Current Clean-up Activities

Future Clean-up Activities

Proposed Changes to Clean-up Plan

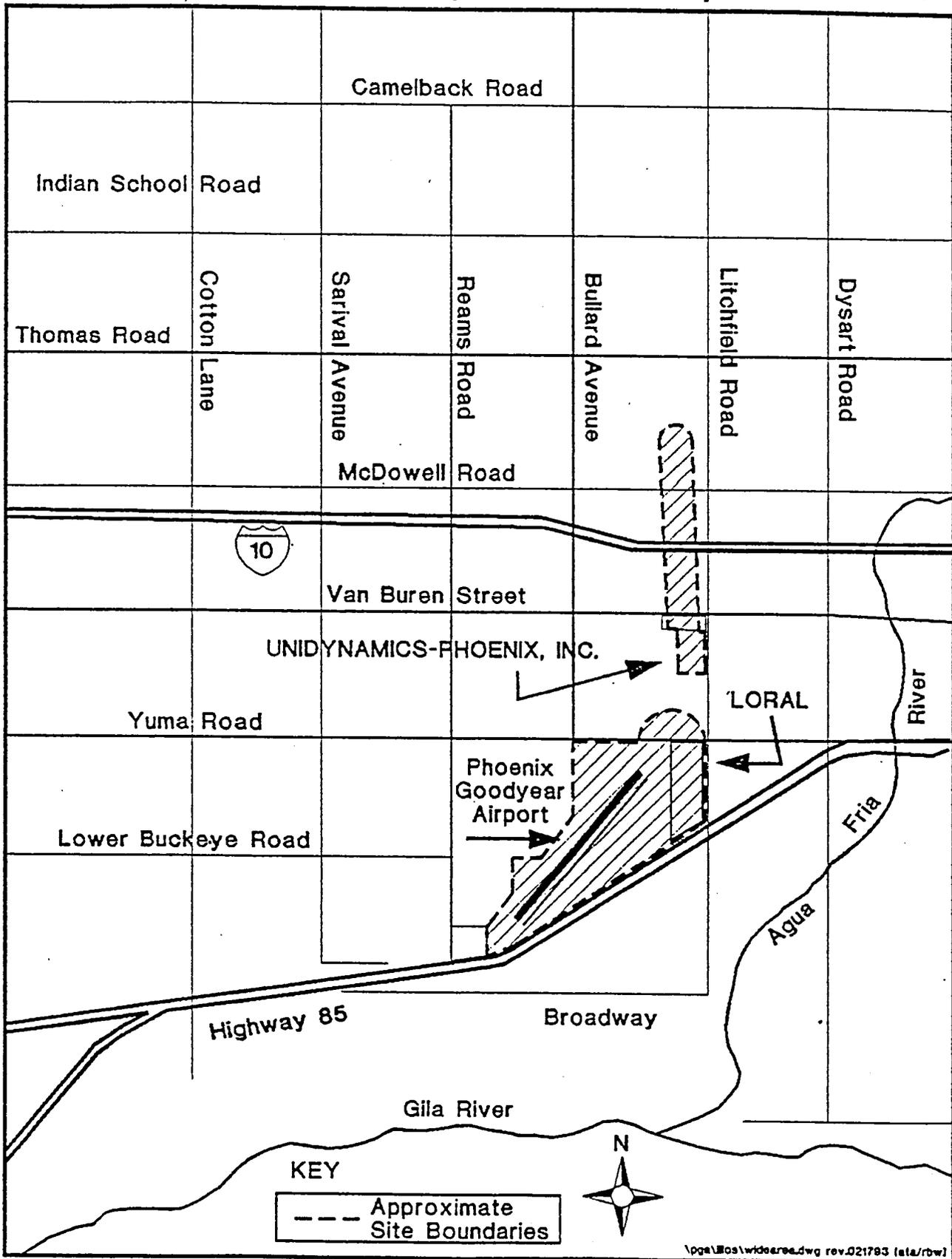
Craig Cooper,
Project Manager, EPA

8:30 - 9:30

- Questions/Comments

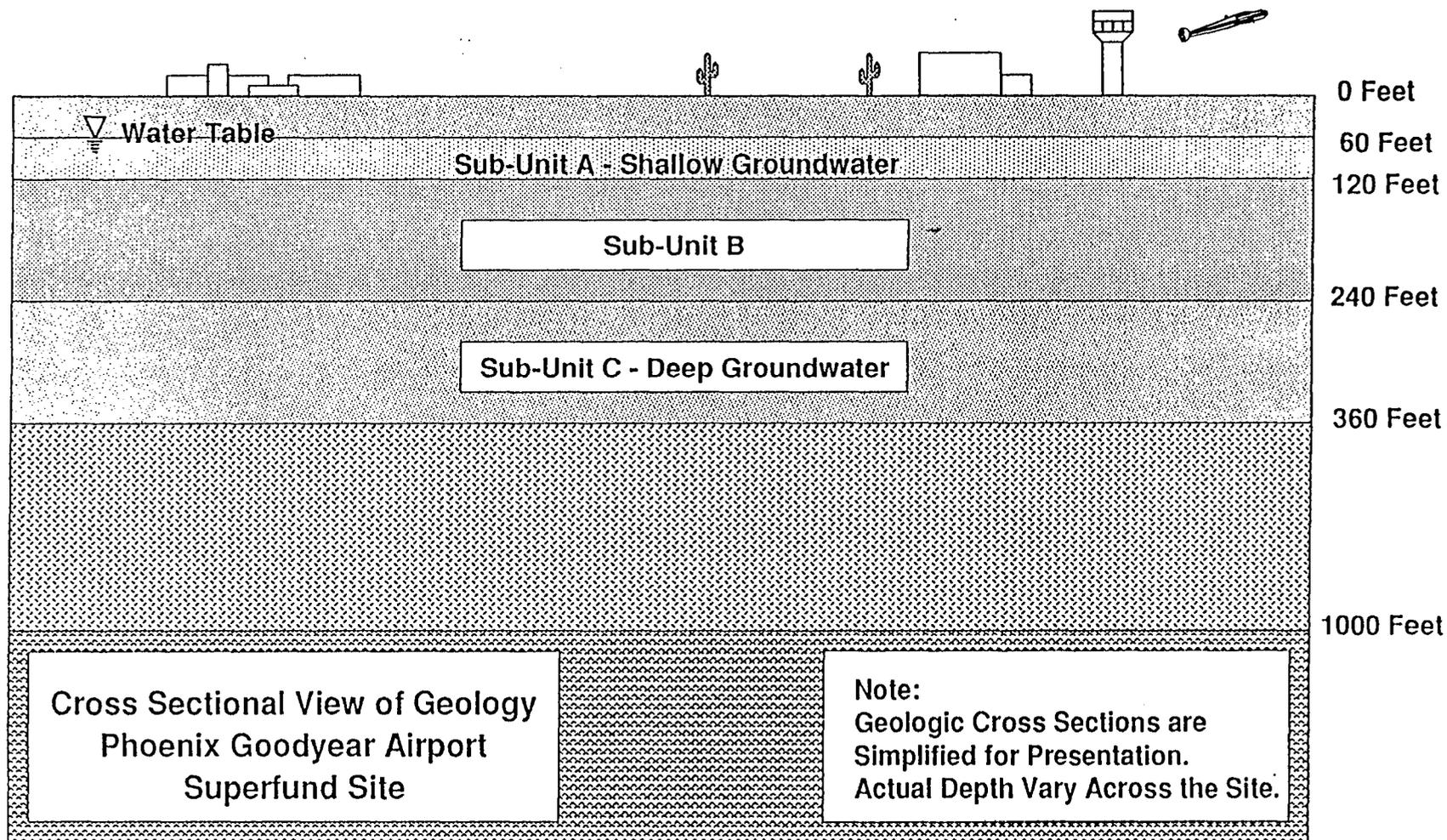
ATTACHMENT "B"

Approximate Boundaries of Phoenix Goodyear Airport Area Superfund Site



UNIDYNAMICS
PHOENIX, INC.

PHOENIX GOODYEAR
MUNICIPAL AIRPORT



Overview of the modifications proposed by Explanation of Significant Differences (ESD#2) to the

PHOENIX-GOODYEAR AIRPORT (PGA) AREA SUPERFUND SITE

September 1989 Record of Decision (ROD)

AIRPORT AREA CHANGES

The Original 1989 ROD Site Clean-up Plan

AIRPORT AREA

- ✦ Soils: Soil vapor extraction with vapor-phase carbon emission controls.
- ✦ Shallow Groundwater: Incorporated 1987 Record of Decision requirement for pump and treat at a centralized air stripping plant with vapor-phase carbon emission controls. Reinject treated water.
- ✦ Deep Groundwater: Pump and treat at a centralized air stripping plant. Provide treated water to City of Goodyear.

The Proposed Site Clean-up Plan as modified by ESD#2

AIRPORT AREA

- ✦ Soils: same as 1989 ROD.
- ✦ Shallow Groundwater: same as 1989 ROD.
- ✦ Deep Groundwater: same as 1989 ROD except use liquid-phase GAC treatment and reinject treated water back into deep groundwater zone.

Overview of the modifications proposed by Explanation of Significant Differences (ESD#2) to the

PHOENIX-GOODYEAR AIRPORT (PGA) AREA SUPERFUND SITE

September 1989 Record of Decision (ROD)

UNIDYNAMICS AREA CHANGES

The Original 1989 ROD Site Clean-up Plan

UNIDYNAMICS AREA

- ✦ Soils: Soil vapor extraction with vapor-phase carbon emission controls.
- ✦ Shallow Groundwater: Pump and treat at a centralized air stripping/ liquid-phase carbon treatment plant with vapor-phase carbon emission controls. Reinject treated water.
- ✦ Deep Groundwater: Pump and treat at a centralized air stripping/liquid-phase carbon treatment plant with vapor-phase carbon emission controls. Provide treated water to City of Goodyear.

The Proposed Site Clean-up Plan as modified by ESD#2

UNIDYNAMICS AREA

- ✦ Soils: same as the 1989 ROD except treat extracted contaminant vapors by thermal oxidation and wet scrubbing.
- ✦ Shallow Groundwater: same as the 1989 ROD except suspend implementation of the liquid-phase carbon unit until warranted.
- ✦ Deep Groundwater: same as the 1989 ROD except reinject treated water back into deep groundwater zone.

Overview of the modifications proposed by
Explanation of Significant Differences (ESD#2) to the

PHOENIX-GOODYEAR AIRPORT (PGA) AREA SUPERFUND SITE

September 1989 Record of Decision (ROD)

SITE-WIDE CHANGES

The Original 1989 ROD
Site Clean-up Plan

SITE-WIDE REQUIREMENTS

- ◆ Soil cleanup standards
- ◆ Groundwater cleanup standards

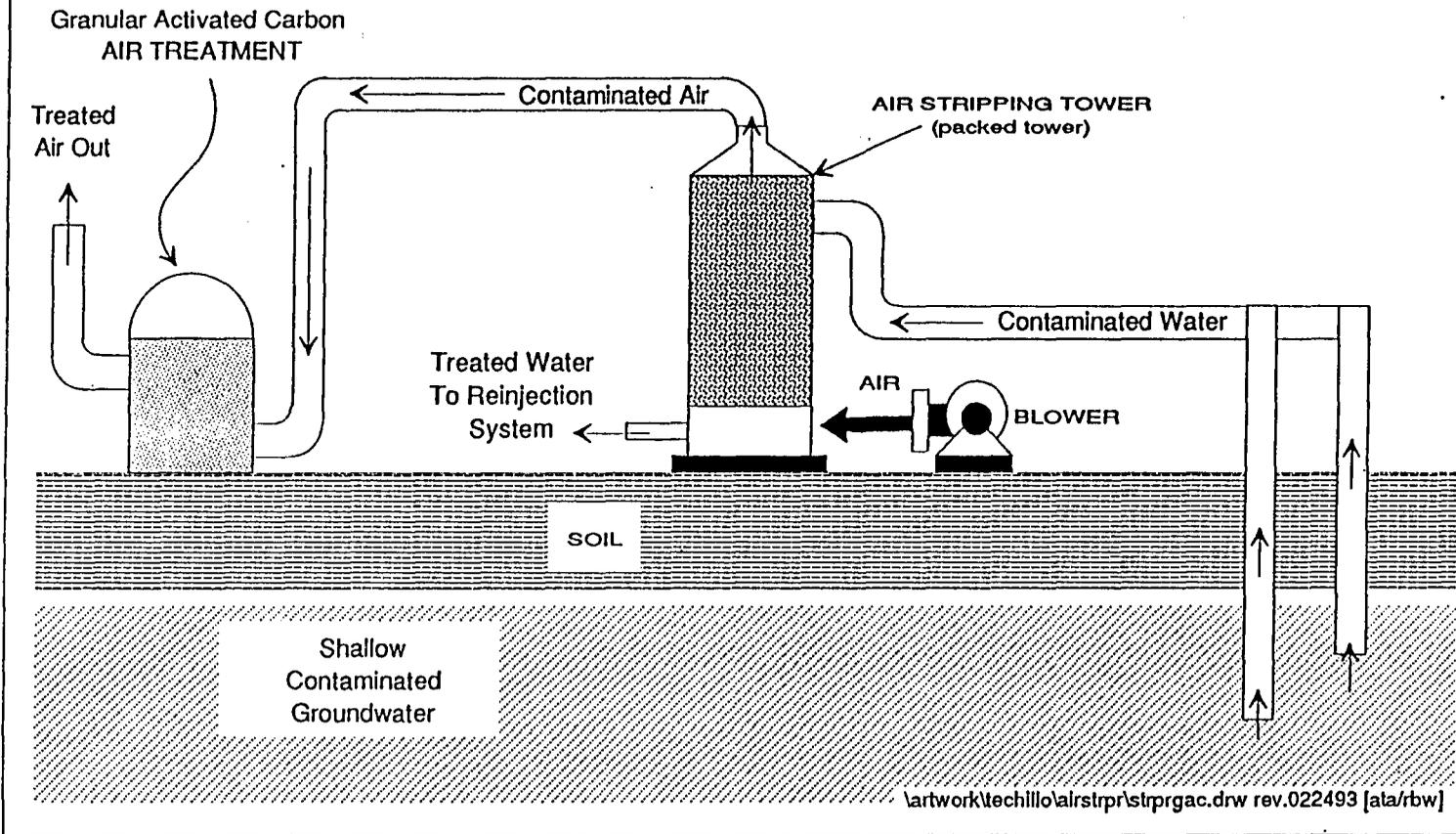
The Proposed Site Clean-up Plan
as modified by ESD#2

SITE-WIDE REQUIREMENTS

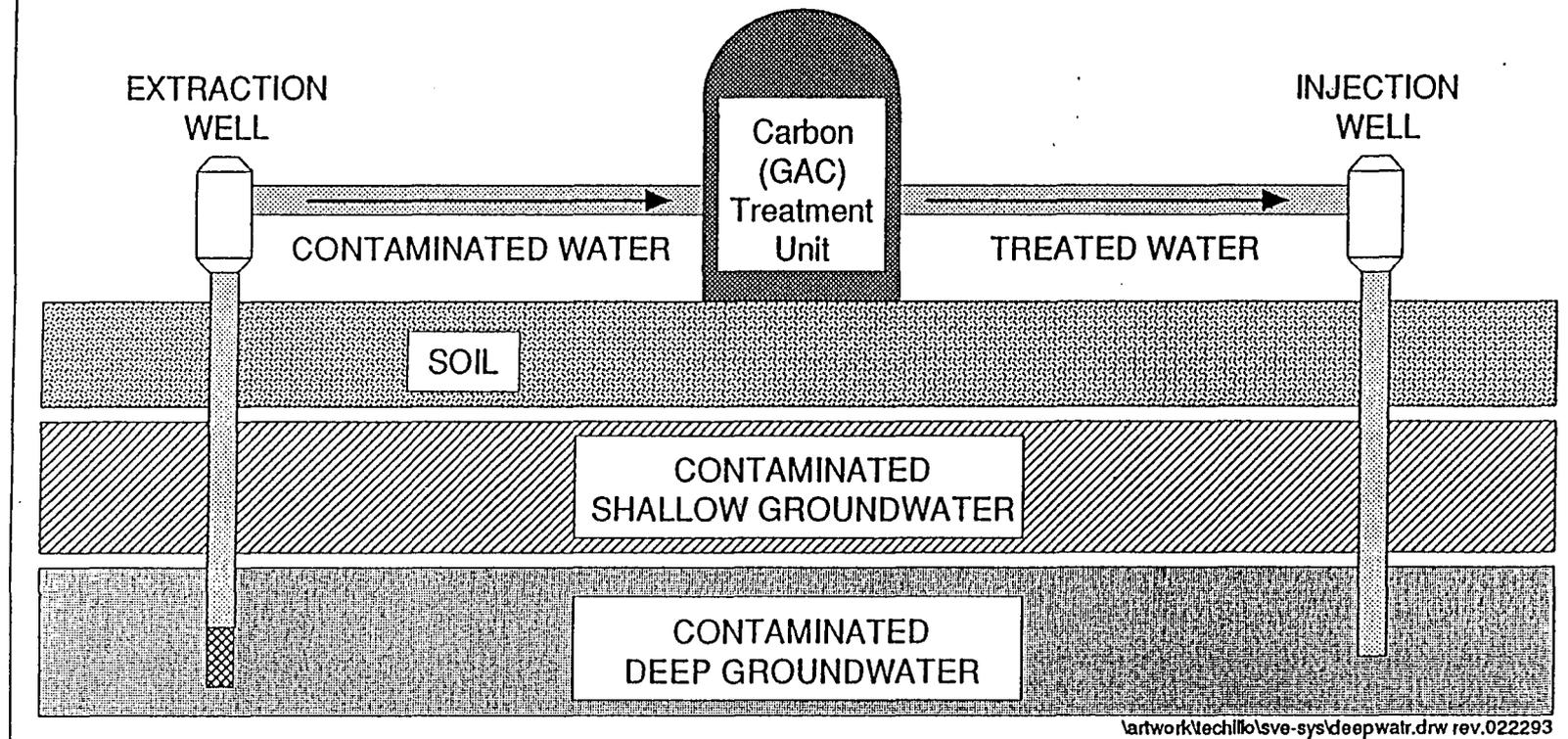
Same as the 1989 ROD except:

- ◆ Add cleanup standards for four new contaminants.
- ◆ Liquid-phase carbon treatment at the well-head for drinking water wells contaminated by Airport or Unidynamics areas.

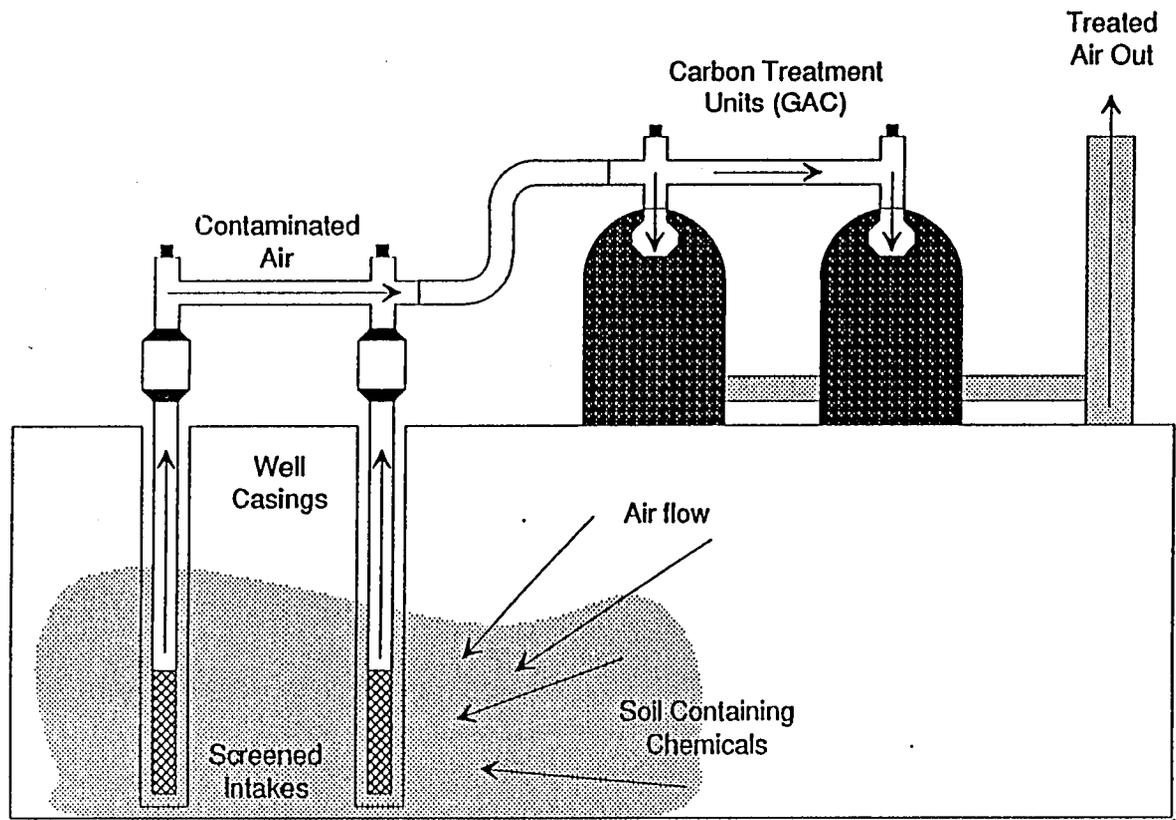
Airport Area and Unidynamics Area
Shallow (Subunit A) Groundwater Treatment System
with Vapor-phase Granular Activated Carbon (GAC) Emission Controls



Airport Area
Deep (Subunit B/C) Groundwater Treatment System

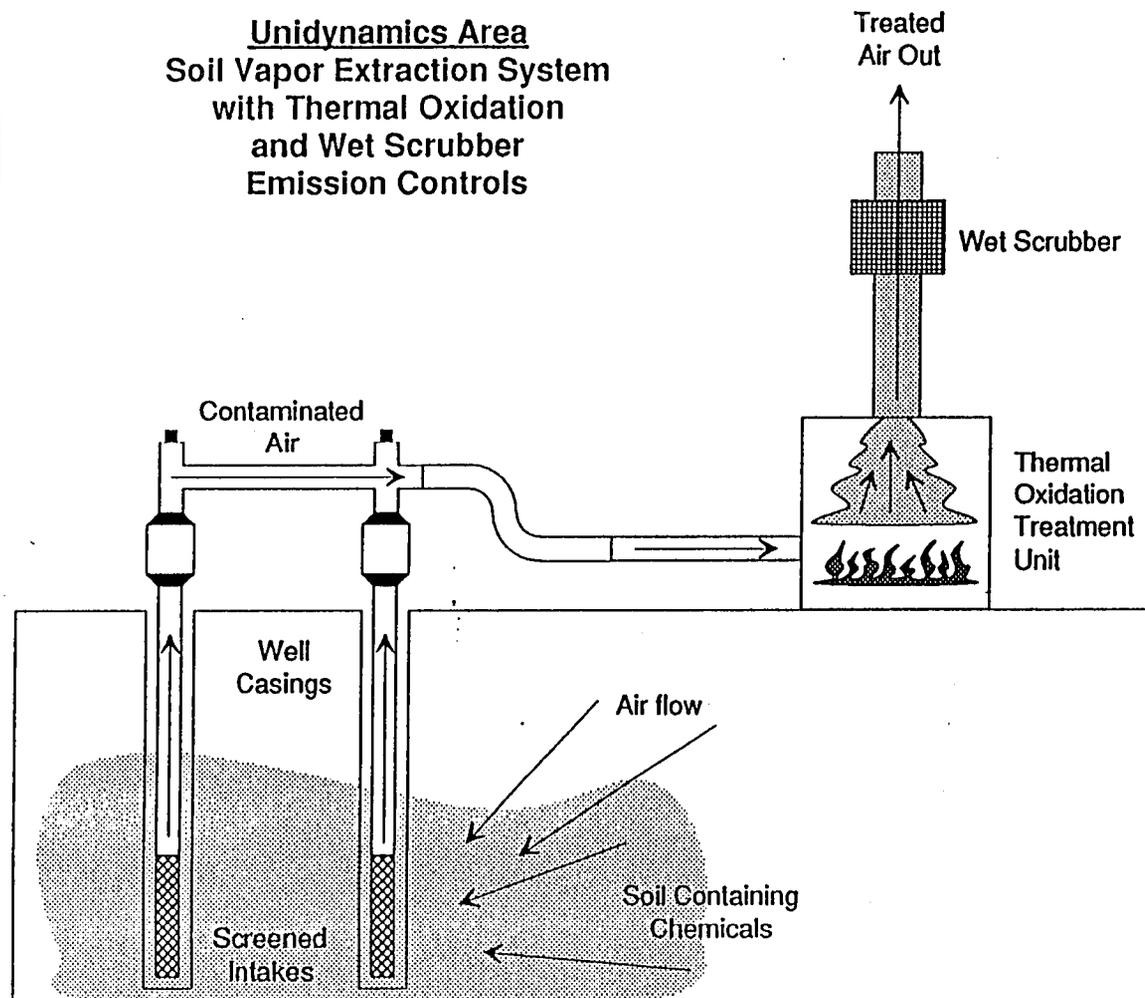


Airport Area
Soil Vapor Extraction System
with Vapor-Phase Granular Activated Carbon (GAC)
Emission Controls



\\artwork\tech\illo\svs-sys\vrphas1.dwg rev.022493 [ata/bw]

**Unidynamics Area
Soil Vapor Extraction System
with Thermal Oxidation
and Wet Scrubber
Emission Controls**



lartwork\tech\illol\ave-sys\vrphas2.drw rev.022403 [ata/bw]

PUBLIC NOTICE

The U.S. Environmental Protection Agency announces the availability of an Explanation of Significant Differences for the cleanup of the Phoenix-Goodyear Airport Superfund site Goodyear, Arizona

Under Section 117 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendment and Reauthorization Act of 1986 (SARA), the U.S. Environmental Protection Agency (EPA) is required to publish an Explanation of Significant Differences (ESD) whenever a significant change is made to a final cleanup plan.

After publishing a draft ESD for public review and comment, EPA is modifying the Record of Decision (ROD) for the Phoenix-Goodyear Airport Superfund site in the following ways:

- 1) Changing the treatment technology for the soil remedy at the northern portion of the site to thermal oxidation;
- 2) Suspending implementation of the liquid-phase granular activated carbon unit of the shallow groundwater remedy for the northern portion of the site;
- 3) Changing the end use requirements for the treated water from the deep groundwater remedy for the northern and southern portions of the site to reinjection into the aquifer, with municipal use as a contingency alternative;
- 4) Changing the treatment technology for the deep groundwater remedy for the southern portion of the site to liquid-phase granular activated carbon;
- 5) Establish drinking water well protection criteria and requirements; and
- 6) Establish groundwater cleanup levels for benzene, ethylbenzene, tetrachloroethene, and 1,1,2,2-tetrachloroethane.

A complete copy of the ESD and the supporting Administrative Record can be reviewed at:

Avondale Public Library
328 West Western Avenue
Avondale, Arizona 85323
(602) 932-9415

For further information contact:



Vicki Rosen
Community Relations Coordinator
U.S. Environmental Protection Agency
75 Hawthorne Street (H-1-1)
San Francisco, CA 94105
(415) 744-2187
or TOLL-FREE: (800) 231-3075

ATTACHMENT "C"



PHOENIX-GOODYEAR AIRPORT SUPERFUND SITE

U.S. Environmental Protection Agency, Region IX, 75 Hawthorne Street, San Francisco, CA 94105

GOODYEAR, ARIZONA

MARCH 1993

EPA Announces Proposed Changes to Record of Decision

In 1989, the U.S. Environmental Protection Agency (EPA) signed a Record of Decision (ROD) that serves as the final clean-up plan for the Phoenix-Goodyear Airport (PGA) Superfund site in Goodyear, Arizona. This plan, or remedy, covered both the northern and southern portions of the site. Recently, EPA received new information about site characteristics that makes it necessary to modify and clarify the 1989 ROD on seven points. The changes EPA proposes to the ROD will affect clean-up plans for both the northern and southern portions of the site. They are not fundamental alterations to the original remedy. Nevertheless, they are significant and require EPA to publish a document known as an Explanation of Significant Differences (ESD).

EPA is soliciting public comments on the proposed ESD. A final decision on site clean-up will not be made until all such comments are considered. With this fact sheet, we invite your comments and participation in a public meeting on March 10, 1993.

Proposed Modifications to ROD Clean-up Plan for PGA Site-North

The northern portion of the PGA site consists of the Unidynamics-Phoenix, Inc. (UPI) facility and groundwater contamination emanating from UPI property. The ROD states that the contaminated soils at the Unidynamics facility will be treated by soil vapor extraction with emission controls consisting of vapor-phase granular activated carbon (GAC). EPA's decision to select vapor-

continued on page 2

PUBLIC MEETING

You are invited to participate in a public meeting regarding the proposed Explanation of Significant Differences (ESD) for the Phoenix-Goodyear Airport Superfund site:

Date: Wednesday, March 10, 1993
Time: Open house—6:30 pm
Public meeting—7:30 pm
Place: Agua Fria High School
530 East Riley Drive
Avondale, Arizona

Representatives from EPA and the State of Arizona will answer questions from the public. EPA will accept both oral and written comments on the proposed ESD.

FINAL CLEAN-UP WORK WILL COMMENCE IN 1993

Work to implement the final clean-up action for soil and groundwater contamination at both the airport area and the Unidynamics area will begin this year. Although these remedies will take many years before the contamination has been cleaned up to acceptable levels, this work is essential in order to begin to capture the contamination, reduce the concentration of the contaminants and prevent further spreading of contamination in the soil and groundwater.

Important clean-up activities have taken place during the past two years at this Superfund site. We expect 1993 to be just as productive. Under EPA and Arizona Department of Environmental Quality (ADEQ) oversight, clean-up work in the Unidynamics area is being conducted by Unidynamics-Phoenix, Incorporated. The Goodyear Tire and Rubber Company has taken the lead on clean-up work in the airport area.

In order to monitor groundwater contamination at this Superfund site, Unidynamics tests more than 20 groundwater wells in and around its facility, and Goodyear Tire and Rubber tests more than 60 wells in and around the airport area. The chronology on page 3 presents an overview of the work that has been completed at the PGA Superfund site over the past two years and the work planned for 1993 and beyond. *continued on page 3*

ATTACHMENT "D"

Proposed Changes *continued from page 1*

phase GAC emission controls was based on available soil contamination data as of mid-1989.

Under EPA oversight, Unidynamics proceeded with design work for the soil remedy as described in the ROD. Soil vapor extraction (SVE) wells were installed and tested for the amount of contamination. Unexpectedly high levels of ketone contamination (including methyl ethyl ketone and acetone) were discovered in the soils, prompting the need to re-evaluate the use of vapor-phase GAC emission controls. The revised calculations regarding the amount of soil contamination caused a significant increase in the estimated GAC usage rate. EPA decided that using GAC for this soil cleanup would not only be significantly more expensive, but also may create safety concerns in regard to transporting large volumes of used GAC canisters. Also of concern is the possibility of spontaneous combustion of GAC canisters that are used under conditions of high ketone concentrations.

In light of this new information, EPA recommends changing the vapor-phase GAC emission controls called for in the ROD to thermal oxidation with wet scrubbing for the exhaust emissions. EPA believes thermal oxidation is an appropriate remedy because it is a demonstrated technology for the treatment of soil vapors. When a thermal oxidation unit is equipped with a wet scrubber, it is considered an appropriate technology by the Maricopa County Bureau of Air Pollution Control. In thermal oxidation, the soil vapor is heated, using natural gas or propane, to burn and destroy the vapor contaminants. The wet scrubber operates by spraying water into the exhaust gas of the thermal oxidation unit, thereby removing remaining contaminants prior to venting to the air. With proper operation, thermal oxidation destruction efficiencies of greater than 99% can be achieved for the types of contaminants found in the soil at the Unidynamics facility. In addition, using thermal oxidation technology eliminates the need for handling and transporting large volumes of hazardous waste (i.e. GAC canisters).

EPA also is recommending a change to the Subunit A (shallow groundwater) remedy as stated in the ROD for PGA-north. Instead of using a pump and treat technology with air stripping followed by liquid-phase GAC and vapor-phase GAC treatment of air emissions, EPA now recommends suspending implementation of the liquid-phase GAC unit. Requirements regarding air stripping of the shallow groundwater and subsequent vapor-phase GAC treatment of air emissions remain intact. The liquid-phase GAC unit was originally selected in the ROD to treat ketones detected in the groundwater. However, extensive groundwater monitoring carried out since 1990 has detected only minor ketone contamination. Should signifi-

cant levels of ketone groundwater contamination be found in the future, this shallow groundwater treatment system will be augmented with a liquid-phase GAC or other similar technology.

As for the final proposed remedy modification for the northern portion of the PGA site, EPA recommends a change in the end-use requirements of the Subunit C (deep groundwater) remedy. Instead of incorporating treated deep groundwater into the community potable water supply, EPA now recommends reinjecting this water back into the deep groundwater section of the aquifer. EPA is proposing this change in the end-use requirements because it is likely that the costs to the City of Goodyear for accepting this water would be excessive.

Proposed Modifications to ROD Clean-up Plan for PGA Site-South

The southern portion of the PGA site consists of the Loral Defense Systems-Arizona property and the Phoenix-Goodyear Airport property (hereafter referred to as the "airport area") and any groundwater contamination emanating from these properties. The findings of a rigorous groundwater monitoring program carried out in 1991 and 1992 concluded that the extent and amount of deep groundwater contamination is much less than what was estimated in the ROD. In order to design and implement an efficient cleanup of the deep groundwater based on this new information, EPA proposes changing the deep groundwater treatment technology from a centralized air stripping system to two or more independent liquid-phase GAC treatment systems.

As for the other modification for the southern portion of the PGA site, EPA recommends changing the end-use requirements for treated deep groundwater. Instead of providing this treated groundwater to the City of Goodyear for municipal use, EPA proposes reinjecting the water back into the deep groundwater section of the aquifer. This EPA recommendation is based primarily on a City of Goodyear analysis indicating prohibitive costs for municipal use of the treated water. EPA's new reduced estimates of the amount and rate of water required to be withdrawn from the deep section of the aquifer also indicate that the reinjection option will be cost-effective.

Site-Wide Modifications

EPA proposes adding the following requirement to the ROD: In the event that groundwater contamination related to the Unidynamics or airport areas is found at concentrations in excess of site groundwater clean-up levels in private or municipal drinking water wells near the PGA site, these wells shall be treated by wellhead liquid-phase GAC

continued on page 5

Final Clean-up Work *continued from page 1*

1991

AIRPORT AREA

- ✦ Began installation of three new shallow groundwater (also known as Subunit A) wells and nine new deep groundwater (also known as Subunit B and C) monitoring wells.
- ✦ Began expansion and improvements to the shallow groundwater treatment plant extraction and injection system.
- ✦ Prepared a clean-up plan for the former chromium sludge ponds (see EPA fact sheet dated July 1991).

UNIDYNAMICS AREA

- ✦ Installed two additional shallow and two additional deep groundwater monitoring wells.
- ✦ Implemented a successful pilot study of groundwater treatment using various air stripping technologies and liquid-phase granular activated carbon units.
- ✦ Installed four soil vapor extraction wells.

1992

AIRPORT AREA

- ✦ Completed expansion of the shallow groundwater treatment plant extraction system. This groundwater treatment plant now treats about 700 gallons of contaminated water every minute and has cleaned up over 400 million gallons of groundwater since its December 1989 startup.
- ✦ Built and commenced operation of air emission controls for the expanded shallow groundwater treatment plant.
- ✦ Solidified and buried approximately 4,000 cubic yards of soil contaminated with chromium and cadmium at the former chromium sludge ponds.

- ✦ Fixed seven old wells so that contamination cannot migrate from the shallow groundwater to the deep groundwater zone.
- ✦ Completed all design documents for the soil remedy and for the deep groundwater remedy.

UNIDYNAMICS AREA

- ✦ Completed a successful pilot test of the soil remedy using thermal oxidation and wet scrubbing.
- ✦ Completed the preliminary design for the soil remedy.
- ✦ Completed the preliminary design for the groundwater remedy.
- ✦ Installed three new shallow groundwater wells and one new deep groundwater well.

1993

(Scheduled Work)

AIRPORT AREA

- ✦ Construct and commence operation of the final soil remedy.
- ✦ Commence construction of the deep groundwater remedy.
- ✦ Continue operation of the shallow groundwater remedy.

EPA expects operation of the soil remedy at the airport property to continue until about 1998. The shallow groundwater remedy may stay in operation for about 25 years, and the deep groundwater remedy may complete its cleanup in about 10 years.

UNIDYNAMICS AREA

- ✦ Commence interim operation of the soil remedy.
- ✦ Complete the final design, and construct the remaining portions of the soil remedy.
- ✦ Construct and commence operation of Phase 1 of the groundwater remedy.
- ✦ Prepare the final design for the remaining two phases of the groundwater remedy.

Operation of the soil remedy at the Unidynamics property is expected to continue until about 1998. The groundwater remedy may need to remain in operation for about 25 years.

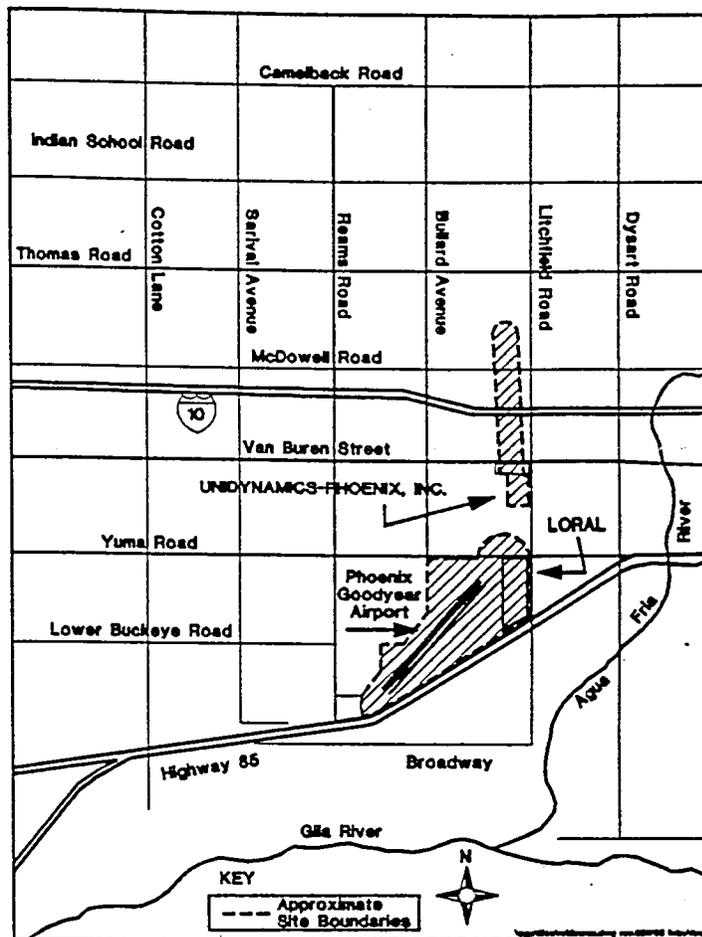
SUPERFUND SITE BOUNDARIES CLARIFIED

Over the past year, it has come to EPA's attention that there is some confusion regarding the Phoenix-Goodyear Airport Superfund site boundaries. In 1984, EPA established a broad overall study area in order to investigate and define areas with soil and/or groundwater contamination. Now that such areas have been generally identified, EPA can estimate the location of PGA site boundaries. This article and map identify the approximate site boundaries for the PGA Superfund site.

In general, EPA uses the term "site," which is not defined under Superfund law, interchangeably with the term "facility." "Facility" is defined as "the source or sources of contamination and any areas where a hazardous substance has come to be located." To date, the sources of contamination have been determined to be the target areas of soil contamination located on Unidynamics property and on Loral and airport properties. However, in the airport area, the source of groundwater contamination just north of Yuma Road is undetermined at this time. Areas where contamination has come to be located include groundwater contamination that has migrated away from the above mentioned properties.

In the 1989 Record of Decision and its supplements, EPA established the required clean-up levels for contaminated soil and groundwater in the airport and Unidynamics areas. At this Superfund site, in order to approximate where groundwater contamination has migrated, EPA uses the five parts per billion (ppb) concentration contour line for trichloroethylene (TCE). Although contaminants other than TCE are present in the groundwater, it has been EPA's experience that TCE is the best indicator chemical of the extent of groundwater contamination at the PGA site. The map on this page provides an approximation of the PGA Superfund site boundaries as of the issuance of this fact sheet. It is important to realize that because the groundwater contamination in the Unidynamics area is not currently undergoing active remediation, the five ppb TCE line is migrating in the direction of groundwater flow in that area (north-northwest).

In addition, this discussion of site boundaries should not be confused with the term "on site" which is used under Superfund law with respect to the requirements for state and local permits. Finally, the map indicates only approximate site boundaries and therefore should not be used for any legal determinations. Please call the EPA Project Manager listed on page 6, should you have any questions regarding the PGA Superfund site boundaries.



Approximate Boundaries:
Phoenix-Goodyear Airport Area Superfund Site

SITE UNDERGROUND STORAGE TANKS ALSO REQUIRE CLEAN-UP ACTIONS

More than 20 current and former underground storage tanks (USTs) have been identified in the airport area. Most of these USTs were used for the storage of petroleum products, primarily aviation fuels.

Pursuant to state and federal UST laws (Note: Superfund law generally does not cover USTs), the owners of these USTs have been decommissioning the non-operational tanks and investigating them for releases of contaminants. One UST investigated by the City of Phoenix was determined to have released aviation gasoline in soil and groundwater in the Superfund clean-up areas. In 1992, the City of Phoenix commenced operation of a soil vapor extraction/thermal oxidation system to clean up soil contamination. The City of Phoenix, and Goodyear Tire and Rubber have also signed an agreement to cooperate on the cleanup of groundwater where the gasoline and TCE contaminated areas overlap.

PIPELINE ROUTES FOR GROUNDWATER TREATMENT SYSTEMS PROPOSED

The pipeline routes for all the groundwater treatment systems needed to clean up contaminated groundwater in both the northern and southern portions of the Superfund site have been proposed. These routes lie within or in close proximity to the approximate site boundaries identified in the map on page 4. Construction of the final groundwater remedies at both the northern and southern portions of the site will begin in 1993. Because the proposed pipelines routes lie within industrial or agricultural areas, impacts to existing residences and businesses are not anticipated.

At the southern portion of the site, all pipeline routes currently are contained within the boundaries of the Loral and airport properties. The one possible future exception to this may be one pipeline starting on Loral property and extending out approximately 500 feet north of Yuma Road. The final decision as to the need for this particular pipeline has not yet been determined by EPA.

The shallow groundwater remedy for the northern portion of the site will require a pipeline to extend north of the Unidynamics property, parallel with the Southern Pacific Railroad line underneath Interstate 10, and will terminate north of McDowell Road. The final layout for additional pipelines between McDowell and Thomas roads has not yet been determined by EPA.

If you have any questions or concerns about these proposed pipeline routes, please write EPA at the address below or attend the public meeting scheduled for March 10.

Modifications, continued from page 2

treatment. Although EPA does not anticipate that site groundwater contamination will significantly impact nearby drinking water wells, EPA recommends this preventative measure in order to establish a clear directive for the protection of public health.

Additionally, EPA is proposing groundwater clean-up levels for four new site contaminants as follows: benzene, 5 parts per billion (ppb); ethylbenzene, 700 ppb; 1,1,2,2-tetrachloroethane, 0.18 ppb; and tetrachloroethene, 5 ppb.

OPPORTUNITY FOR PUBLIC INVOLVEMENT

EPA encourages community participation in the decision-making process. You will have the opportunity to voice your concerns and make comments in person at the March 10, 1993 public meeting announced on page 1. A general overview of the proposed Explanation of Significant Differences and other important site-related information regarding clean-up activities will be presented. Following the presentation, EPA will answer questions and take comments from the public. A court reporter will be present to ensure your comments are accurately recorded. You may also submit your comments in writing at this time.

✦ WRITE TO EPA BY APRIL 1, 1993 ✦

EPA will accept written public comments on the proposed ESD for the Phoenix-Goodyear Airport site from March 3, 1993 through April 1, 1993. Please send your comments postmarked by April 1, 1993 to: Craig Cooper, Remedial Project Manager, U.S. EPA, 75 Hawthorne St. (H-7-2), San Francisco, CA 94105.

MAILING LIST COUPON

If you would like to be on the mailing list for the Phoenix-Goodyear Airport Superfund site, please fill out this coupon and return it to: Vicki Rosen, Community Relations Coordinator, U.S. EPA, 75 Hawthorne St. (H-1-1), San Francisco, CA 94105.

Name: _____

Address: _____

City/State/Zip: _____

Organization/Affiliation: _____

INFORMATION REPOSITORY

The Administrative Record is a file which includes all documents, including the proposed Explanation of Significant Differences, upon which EPA bases its decision for cleanup of a site. A copy of the Administrative Record for the PGA site is available for review at:

Avondale Public Library
328 West Western Avenue
Avondale, AZ 85323
(602) 932-9415

Hours: Mon, Tues, Thurs, 9 a.m. - 6 p.m.
Wednesday, 9 a.m. - 8 p.m.
Friday, 9 a.m. - 5 p.m.

EPA Superfund Records Center
75 Hawthorne St, 9th Floor
San Francisco, CA 94105
(415) 744-2165

Hours: Mon - Fri, 8 a.m. - 4:30 p.m.

FOR MORE INFORMATION

If you have any questions or concerns about clean-up activities at the Phoenix-Goodyear Airport Superfund site, please contact:

U.S. EPA
75 Hawthorne St.
San Francisco, CA 94105

Craig Cooper
Remedial Project Manager
(H-7-2)
(415) 744-2370

Vicki Rosen
Community Relations
Coordinator
(H-1-1)
(415) 744-2187

EPA Media Contact:
Paula Bruin
(E-2)
(415) 744-1587

or leave a message on EPA's TOLL-FREE line:
(800) 231-3075
and your call will be returned.

POLLUTION PREVENTION TIP:**Proper Disposal of Household Hazardous Waste**

Drain cleaners, paint thinners, furniture strippers, automotive motor oil, pesticides and medicines are often disposed with household garbage, or in storm drains, septic tanks and sewers. When an entire community contributes to the problem, disposal of these items can create serious water quality problems for all water users.

Please do your part to encourage local leaders to institute a household hazardous waste collection program.



United States Environmental Protection Agency
Region 9
75 Hawthorne Street (H-1-1)
San Francisco, CA 94105
Attn: Vicki Rosen

FIRST CLASS MAIL
U.S. POSTAGE
PAID
U.S. EPA
Permit No. G-35

Official Business
Penalty for Private Use,
\$300

**INSIDE: Phoenix - Goodyear Airport
Proposed Changes to Clean-up Plans**

FYI
- CP

cc: Karen O'Reilly
Enj. Programs



RECEIVED

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

APR 9 11 3:34
Fife Symington, Governor Edward Z. Fox, Director
ENVIRONMENTAL PROGRAMS

April 3, 1993

Mr. Ken Greenberg, Chief
NPDES Compliance Section
U.S. EPA - Region IX
Water Management Division (W-5-3)
75 Hawthorne Street
San Francisco, California 94105

Re: Nonfiler Discharge Report: IMSALCO
3829 So. Estrella Parkway
Goodyear, Maricopa County, AZ

Dear Mr. Greenberg:

This transmits the department report on a nonfiler discharge investigation conducted by Charles E. Ohr, CET, Field Engineer, the Central Regional Office (CRO) at the referenced facility on March 31, 1993. The discharges reported herein are largely a result of the unusually heavy rainfall experienced by central Arizona during the winter period November 1992 - February 1993.

The March 31, 1993 investigation was comprised of interviews with personnel of the City of Phoenix-Goodyear Airport, IMSALCO, site inspection from the airport side of the tailings pond, viewing of the video-tapped discharge of January 7, 1993 and obtaining a copy of the airport logs & photos of the February 6, 1993 discharge.

The referenced facility is a metals recycling reclamation facility with operations that go back to the World War II period on the same site. Facilities include or have included metal shredding, incineration, and metal ingot pressing. There is a large metals tailings pond which contains waste metals (reportedly to be primarily, aluminum oxide) adjacent to the property boundary with the Phoenix-Goodyear Airport. This tailings pond is approximately 80 feet high, 1000 feet wide, and 2500 feet long. A map and photos of the site are enclosed with the nonfiler report.

In mid-February 1993, Ms. Cynthia Parker, Environmental Coordinator for the City of Phoenix Aviation Department called the CRO to report two discharges of sludges and wastewater by the referenced facility to the waters of the United States (an irrigation ditch which eventually reaches the Gila River), after traveling over and depositing sludges and wastewater on the property of the Phoenix-Goodyear Airport located in Goodyear, Arizona.

There is evidence that the IMSALCO facility has discharged off its property on at least two separate occasions since January 1, 1993. Airport personnel video-tapped a January 7, 1993 discharge and took still-photos and placed entries in daily reports of a discharge to airport property from IMSALCO property on February 6, 1993. Airport personnel spoke with IMSALCO by telephone on both occasions, requesting IMSALCO to clean up the mess left on the airport property. Photos taken by this investigator illustrate the scope and impact on the receiving area of the breaches from the tailings dikes. Darkened soils from the tailings discharged were easy to follow to the irrigation ditch south of the property fences and parallel to the railroad tracks. The depth of the deposited tailings on the

ATTACHMENT "E"

Ken Greenberg, Chief
NPDES Compliance Section, U.S. EPA - Region IX
IMSALCO Nonfiler Report
April 3, 1993
Page 2

airport property was measured at 5 1/2 inches (photo #8) next to the fence adjacent to the irrigation ditch.

On March 31, 1993, IMSALCO expressed a serious desire to clean-up the deposits on the airport property after this inspector personally spoke with the IMSALCO General Manager. In all fairness, Mr. Kulik did say that he had been willing to clean-up the spoiled airport property earlier, but that he could not get the airport personnel to return his calls to schedule the work. On April 2, 1993, in a telephone conversation with Ms. Cynthia Parker, I recommended that the City allow IMSALCO to clean up the airport property and consider offering for sale to IMSALCO a strip of land about 100 feet wide and parallel to the tailings pond for the purpose of IMSALCO to build a retaining wall of adequate size to contain on IMSALCO property any future breaches of the tailings pond.

Based on my experience and observations, I anticipate future discharges from the referenced facility following heavy rainfall unless some proactive measures are taken (i.e., construction of retaining walls along the perimeter of the tailings pond) to contain impacts on the IMSALCO property only. I suggest that EPA seriously consider inclusion of such a proactive action by IMSALCO in any EPA enforcement action.

Further, by copy of this letter, I am requesting the department's Aquifer Protection Permit Program to reevaluate earlier department decisions which have reportedly allowed this facility to operate with an exemption to the APP rules concerning individual permits. Conditions observed by this investigator prompt an immediate concern for the groundwater quality under the site, especially when one considers how long this facility has been operating on the same site.

The department will support an EPA enforcement action for Clean Water Act violations. If you have any questions concerning this letter or the nonfiler report, contact me at (602) 207-4435.

Sincerely,



Charles E. Ohr, CET, Acting Manager
Central Regional Office, Field Services Section
Office of Water Quality

CEO:ceo:IMSALCO

Enclosures

cc: M. Reza Azizi, WPCU
Wayne Palsma, NPDES Permit Unit
Lauren Evans, Manager, Plans and Permits Section
Mr. Gene Kulik, Gen. Manager, IMSALCO
✓ Ms. Cynthia Parker, City of Phoenix Aviation Department
Mr. Lynn Kartchner, Director of Public Works, Goodyear

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF WATER QUALITY

NON-FILER REPORT

1. FACILITY

Facility Name Imsalco, Inc
Address 3829 So. Estrella Parkway City Goodyear State AZ
County Maricopa Type of Business metals recycler
Contact Person Gene Kulik Title General Manager Phone (602) 247-5560
Owner IMSALCO (same as above) Phone ()
Address _____ City _____ State _____

2. INSPECTION

Inspector Charles E. Ohr Date March 31, 1993

	Other Individuals Present	Affiliation	Phone
at airport site only	<u>Ms. Cynthia Parker, Env. Programs Coord.</u>	<u>C.O.P.</u>	<u>(602) 273-2730</u>
	<u>Mr. Charlie Boyer, Airport Supvsr.</u>	<u>(C.O.P.)</u>	<u>(602) 932-1200</u>
at Imsalco	<u>Mr. Gene Kulik, General Mgr.</u>	<u>Imsalco</u>	<u>(602) 247-5560</u>

3. OBSERVATIONS - The operation appears to include one or more of the following and may be subject to permitting requirements. (Check all Applicable boxes.)

- SURFACE IMPOUNDMENT (Holding pond, storage/settling pond, lagoon, sewage or sludge lagoon/pond).
- SUBSURFACE DISPOSAL (Treatment/disposal pit, injection well, dry well).
- SOLID WASTE DISPOSAL OPERATION
- LAND TREATMENT OPERATION
- OPERATION WHICH ADDS A POLLUTANT TO A SALT DOME, SALT BED, DRY WELL OR UNDERGROUND CAVE OR MINE
- GROUNDWATER RECHARGE OR UNDERGROUND STORAGE AND RECOVERY PROJECT
- POINT SOURCE DISCHARGE (to dry wash, stream, river, lake, or other surface water body source or to a storm sewer)
- WASTEWATER TREATMENT OPERATION
- DRY WELL(S)
- STORM SEWER
- SILVICULTURAL OR AGRICULTURAL OPERATION
- MINING, MILLING, OR ORE PROCESSING
- EVAPOTRANSPIRATION BED(S)
- SEPTIC TANKS OR ONSITE SEWAGE DISPOSAL SYSTEM WITH CAPACITY EXCEEDING 2000 GPD
- GENERATION OR USE OF RECLAIMED WASTEWATER (Describe type of reuse in Section 8.)
- OTHER _____

4. EXISTING PERMITS

Type	Permit No.	Issue Date	Expiration Date
<input type="checkbox"/> NPDES/APDES	_____	_____	_____
<input type="checkbox"/> Groundwater/APP	_____	_____	_____
<input type="checkbox"/> Reuse	_____	_____	_____
<input type="checkbox"/> Approval to Construct	_____	_____	_____
<input type="checkbox"/> Approval of Construction	_____	_____	_____
<input type="checkbox"/> EPA Haz. Waste Generator Registration	_____	_____	_____
<input type="checkbox"/> Other _____	_____	_____	_____

5. DISCHARGE DESCRIPTION

a) Type of Discharge

Domestic sewage (only) Industrial/Commercial (only) Combined

b) Location of discharge point(s): SE corner of EMSA CO property

c) Source(s) of discharge(s): Breach of tailings ponds

d) Estimated flow rate: unknown

e) Appearance of discharge: black, gray, blue sludges & waters

Color black, gray, blue Odor none

f) Type of treatment provided: settling, evaporation

g) Evidence of previous discharges: numerous erosion channels in sides of the tailings piles and from various surface runoff points around the property.

6. RECEIVING WATER

Subsurface

Surface Water Body:

Water present at time of inspection

Inspector traced discharge to receiving water

Inspector traced apparent drainage path to receiving water

Receiving water identified by company representative

Receiving water identified from topo maps

Receiving water identified by other means: _____

7. SAMPLE COLLECTION: Yes No

Date _____ Time _____

Description _____

8. COMMENTS: The City of Phoenix aviation Division Environ-

mental Coordinator reported discharges from the IMSALCO
property to this department in January 1993. Airport
personnel video-taped the discharge as it occurred
on January 7, 1993. A second incident was reported
on February 6, 1993 by airport staff in their operating
log (copy attached) with photos taken. This department's
inspection on March 31, 1993 was conducted primarily from
the side of the fence on property owned by the City of Phoenix
(airport). The attached photos and site map illustrate
the scope of the problem site. This facility has been
in operation at this site since approximately 1943 to
present as a metals shredder, incinerator, recycler.
The tailing pile from which the discharge originated is approx-
imately 80 ft high, 1000 ft wide, 2500 feet long. The accumulated
sludges were measured to be 5 1/2 inches on the airport property
next to the fence bordering the irrigation ditch.

9. ATTACHMENTS

Photographs

Slides

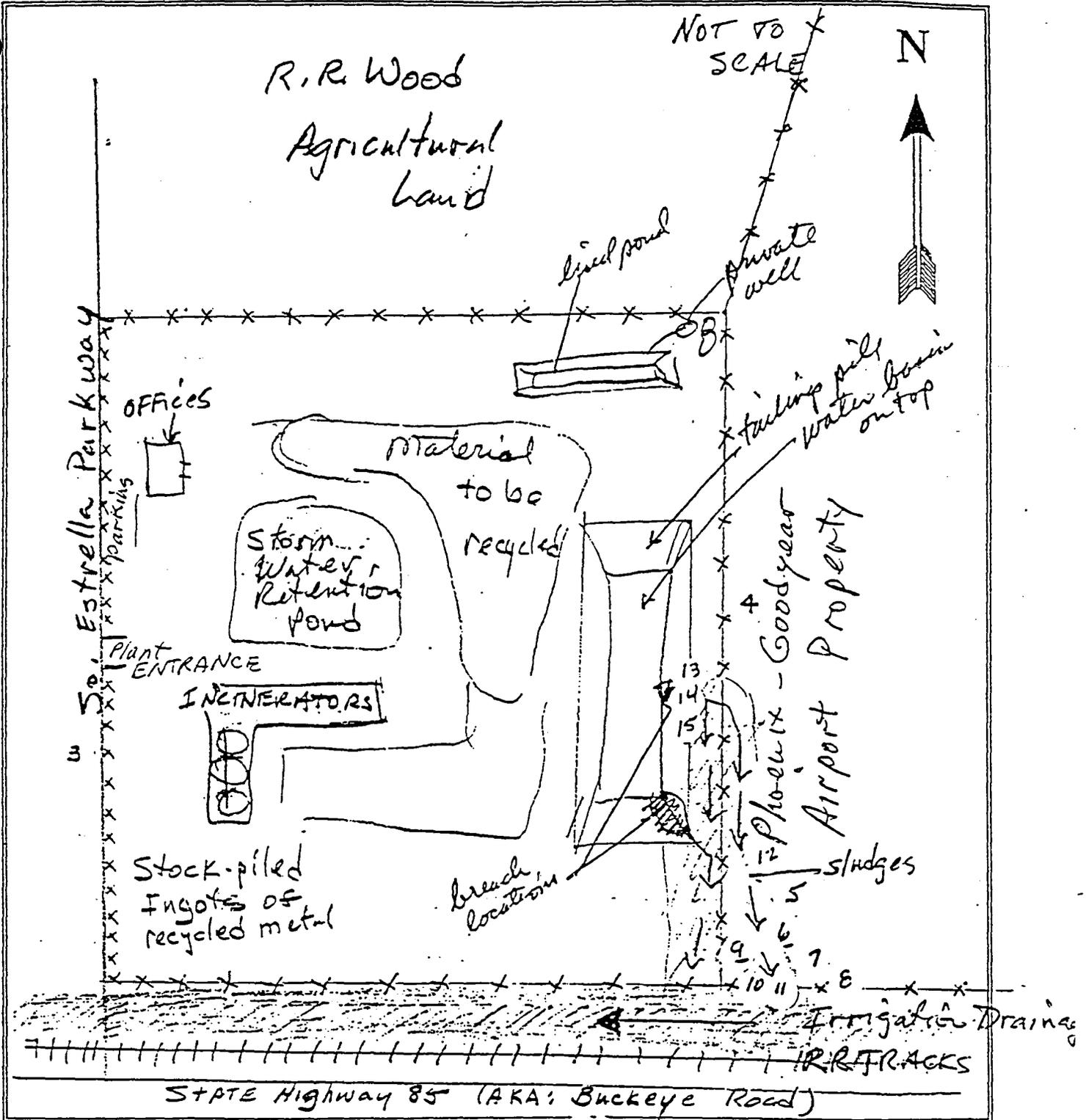
Laboratory Analyses

Map

Additional comments

Other video tape is available, if a copy is requested.

FIELD DRAWING



Facility Name IMSALCO INC.

Prepared by Charles E. Orr

Date April 2, 1993

Numbers refer to photos.

ON the morning of 2/6/93

2-3-93 0600 Ops open. checks made. OK PM

reach
L

2-4-93 0600 Ops open. checks made. OK PM

2-5-93 0600 Ops open. checks made. OK PM

2/6/93 0600 Ops open. checks made. OK PM

CMW

2/6/93 1215 Carlos reported liquid running on airport property from Smelter. I called IASALCO 247-5560 (Smelter). Individual said he would inform the supervisor. PM
1230 Drove back to leak and took pictures. PM

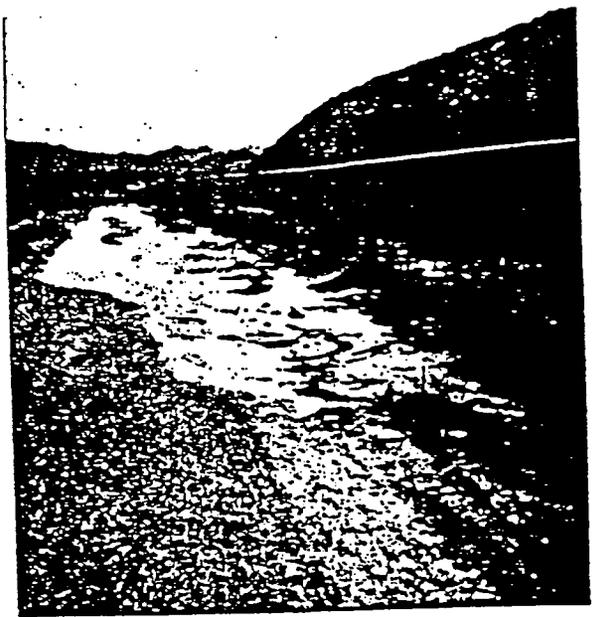
red)

2/6/93

OR

NR

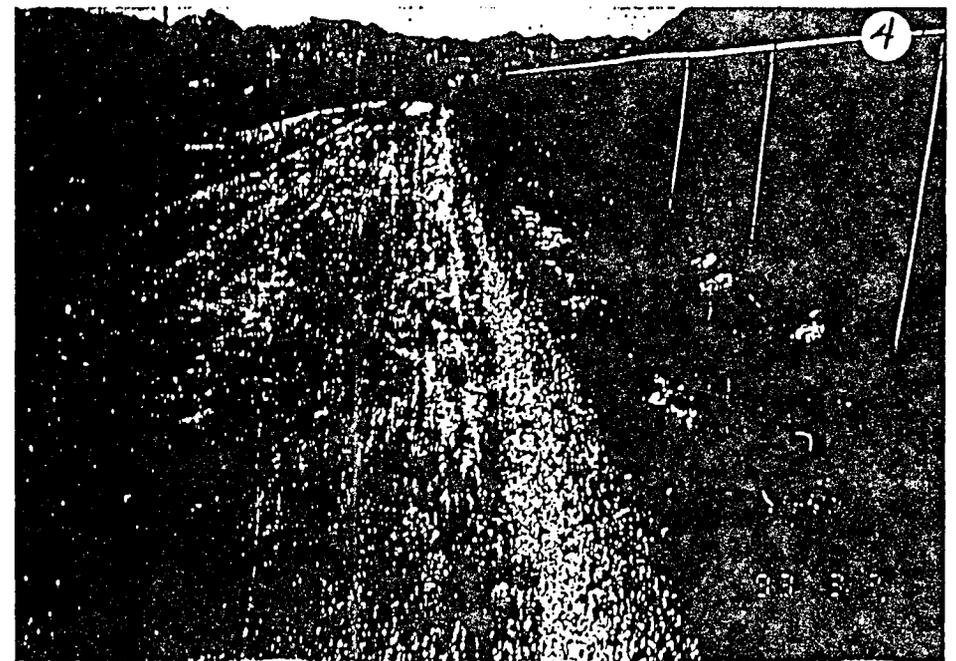
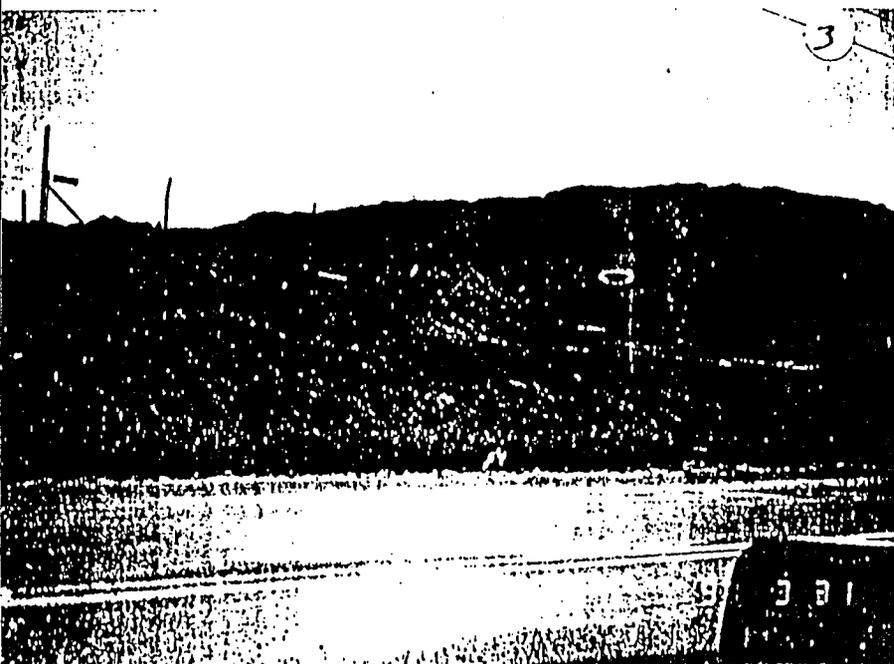
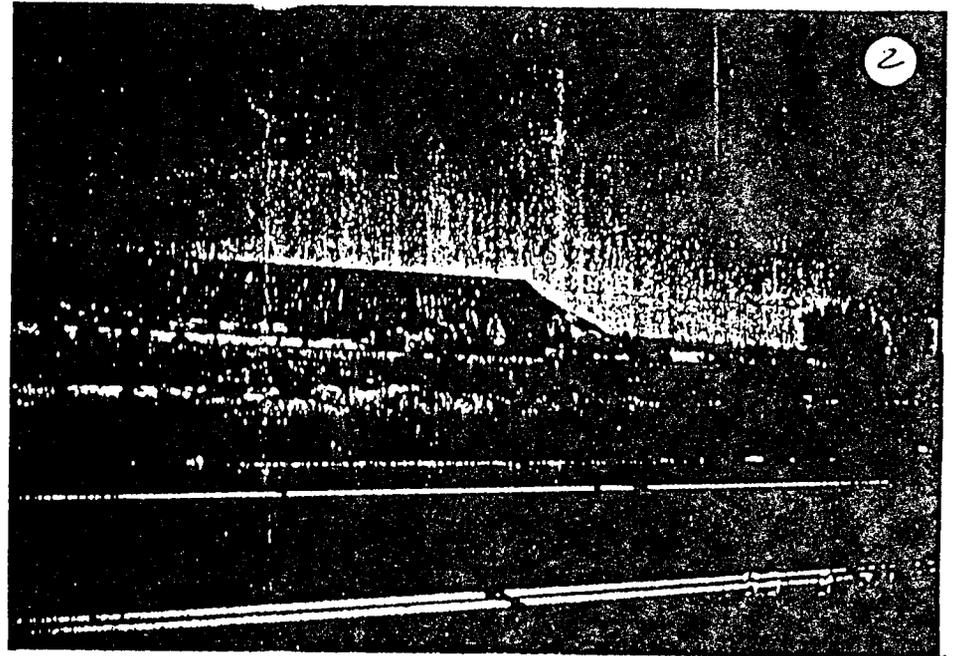
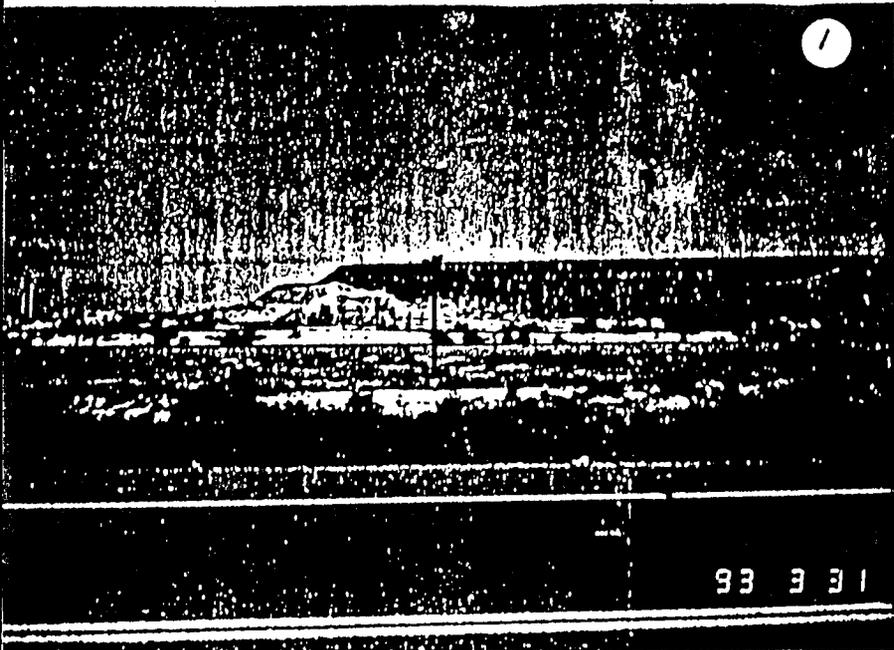
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LB

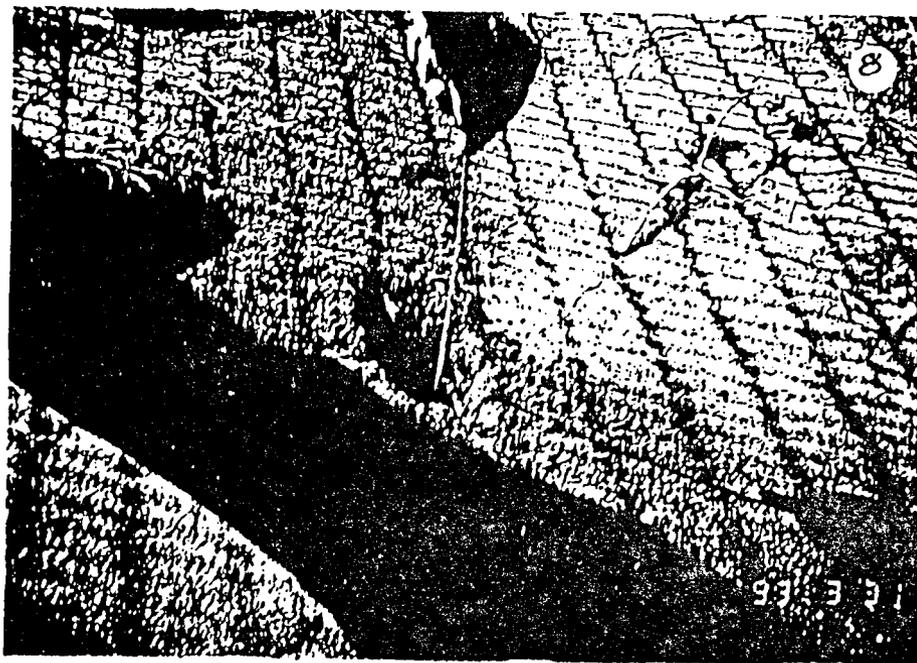
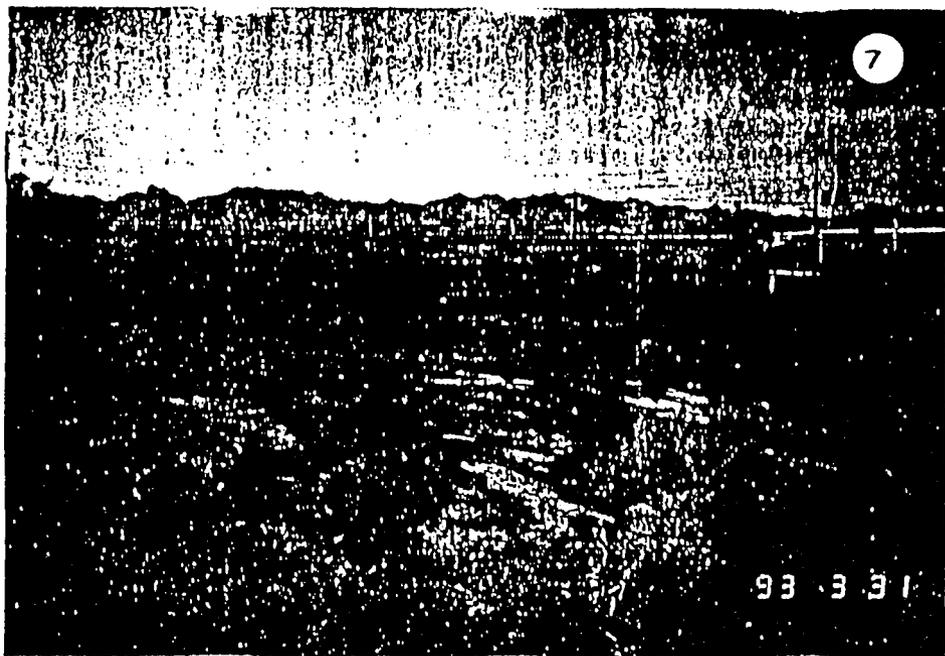
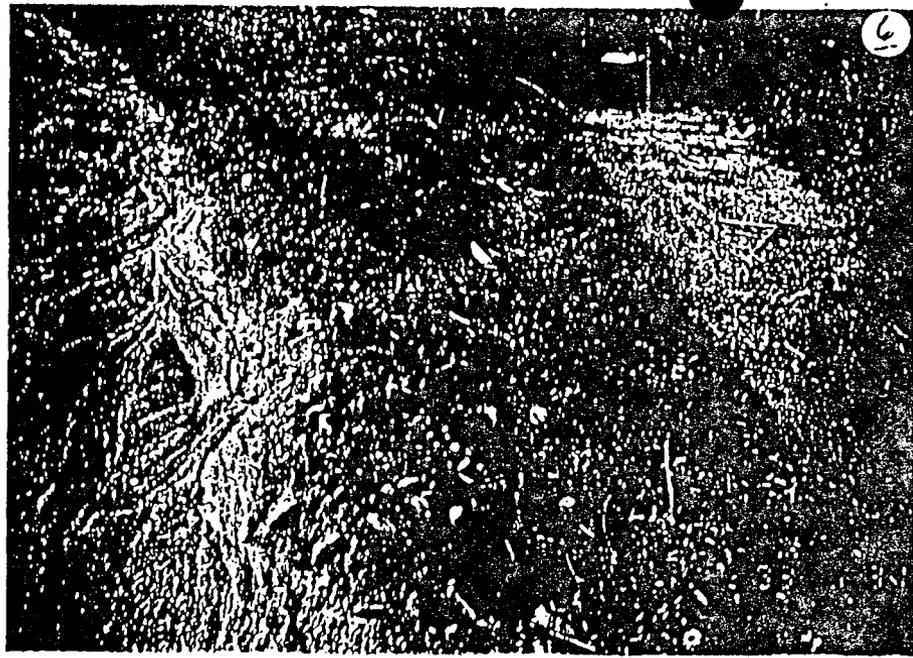
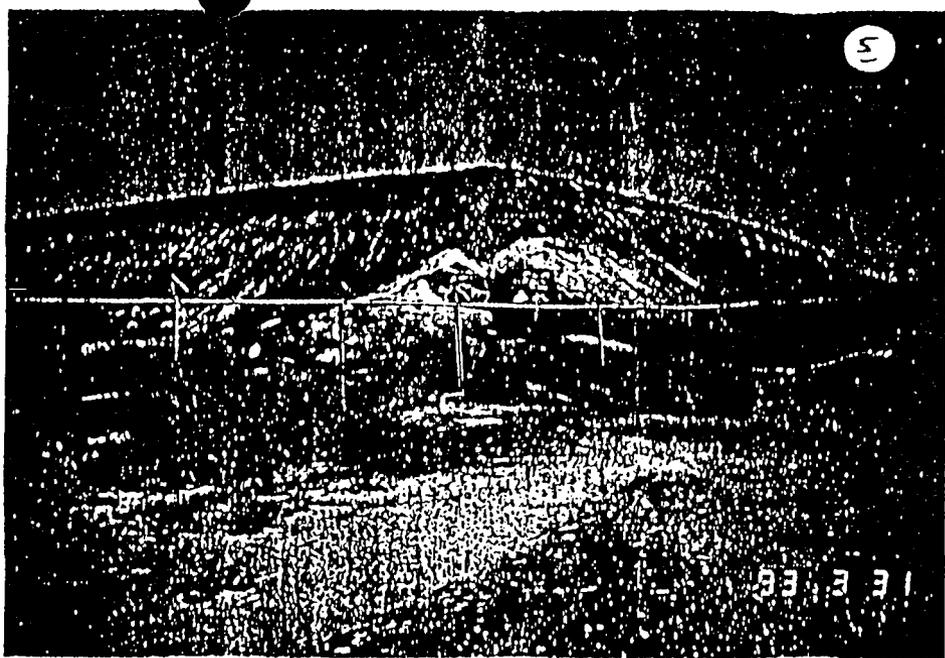


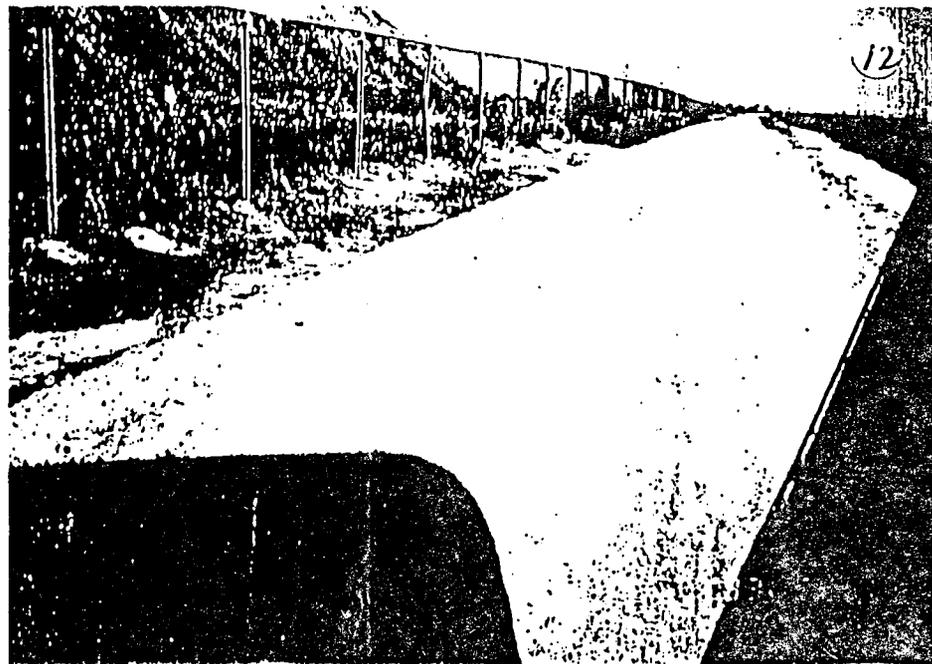
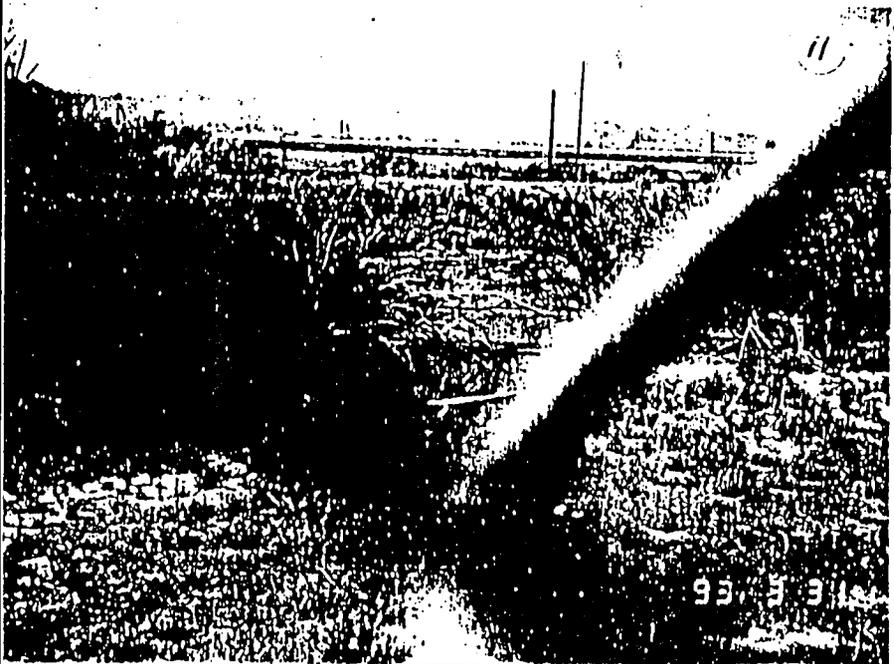
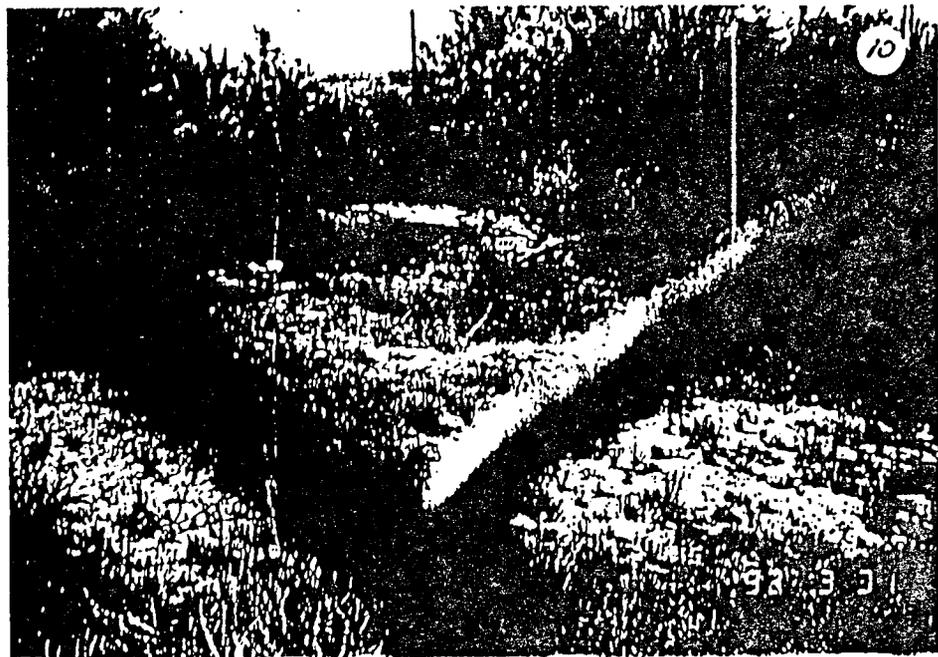
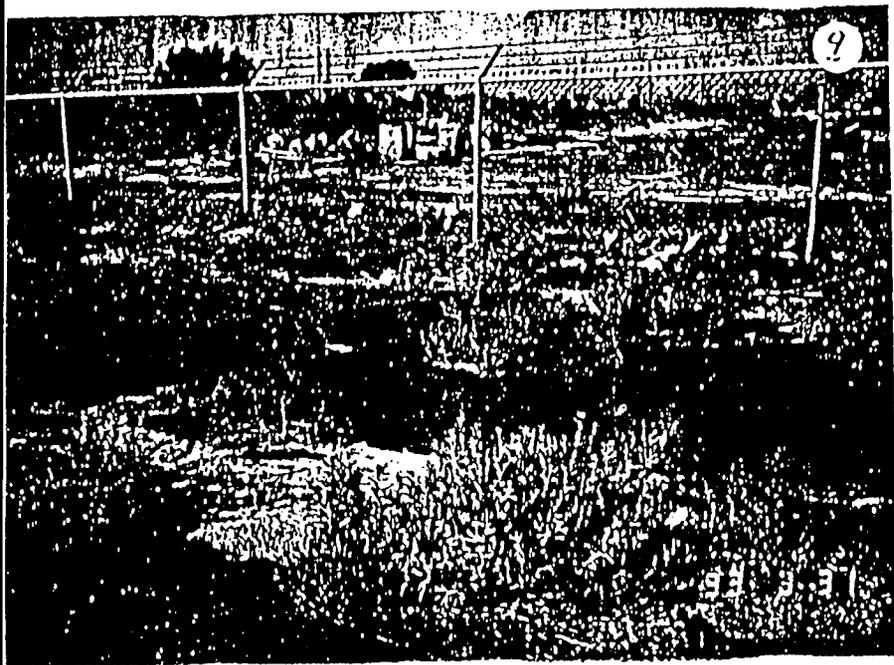
Leaking from Smelter 2/6/93
1215

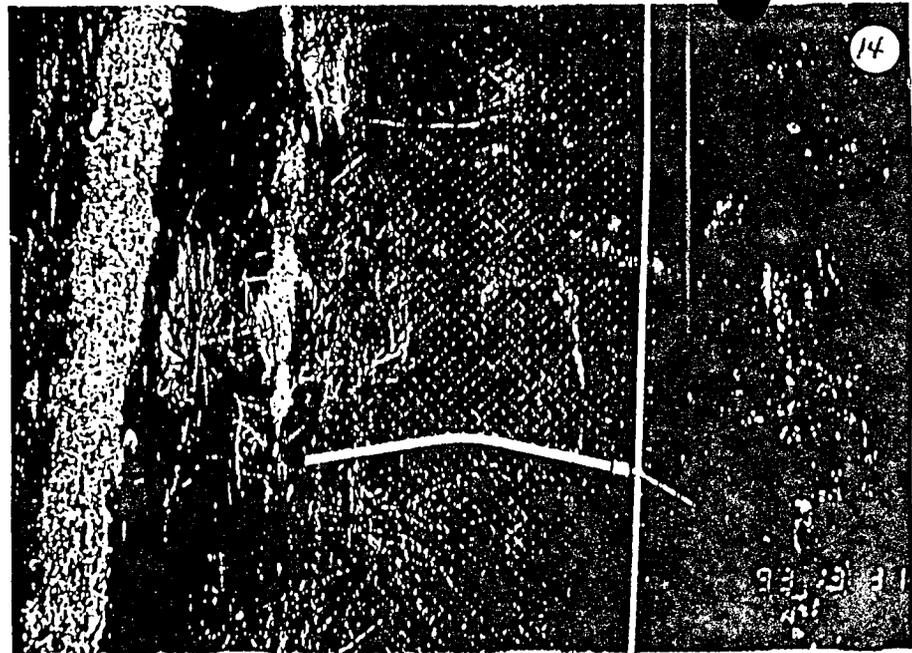
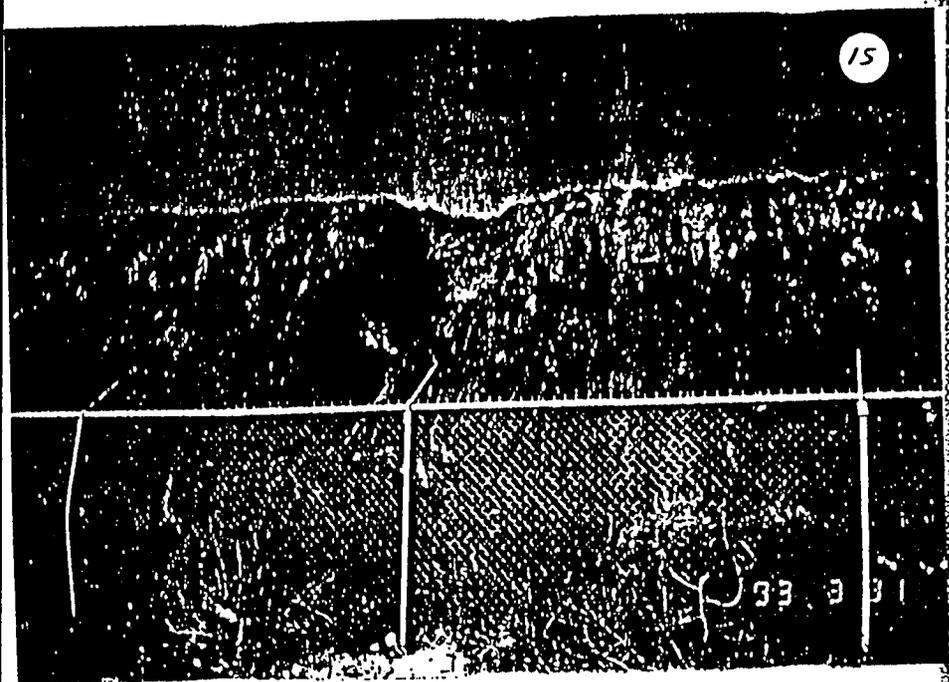
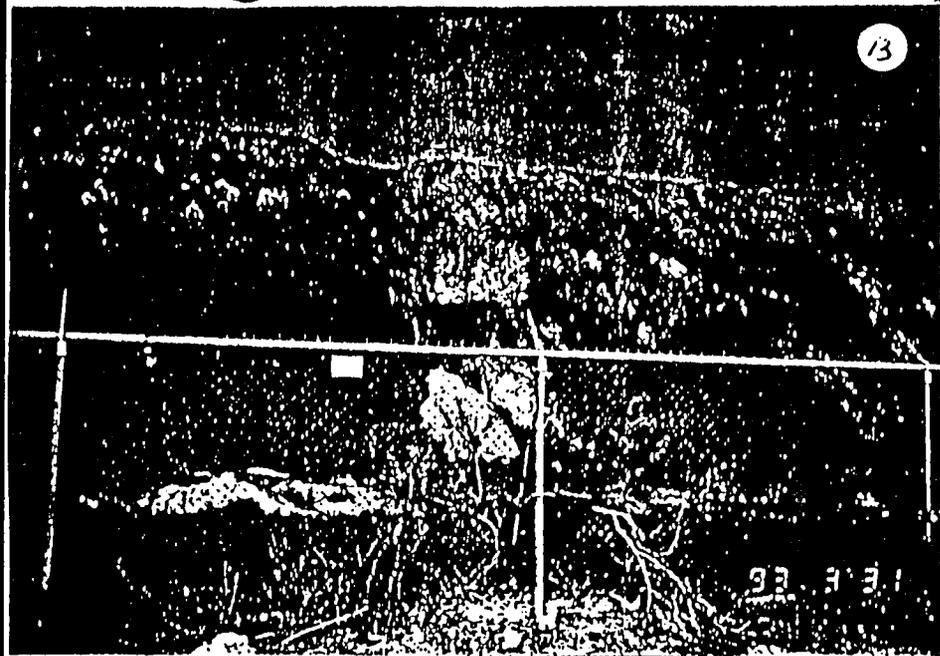


Leaking from Smelter 2/6/93
1215









IMSALCO

May 25, 1993

Arizona Department of Environmental Quality
Office of Water Quality
3033 North Central Avenue
Phoenix, Arizona 85012

Attention: Mr. Charles E. Ohr, CET
Acting Manager
Central Regional Office, Field Services Section

Re: Cleanup of Aluminum Oxide Fines
IMSALCO
Goodyear, Arizona

Dear Mr. Ohr:

This is in response to your letter of April 3, 1993 to Mr. Ken Greenberg of the U. S. Environmental Protection Agency regarding the breach of IMSALCO's pile of aluminum oxide fines due to unusually heavy rainfall during January and February, 1993.

At our request, our consulting engineer, Mr. Bruce Scott of Scott, Allard & Bohannon, Inc., prepared the attached report concerning the corrective actions taken to date.

If you have any questions regarding our efforts to date or the attached report, please call me at 247-5560 or Mr. Scott at 263-0045.

Sincerely,


Gene Kulik
General Manager

Copies to: Addressee (3)
Mr. Ken Greenberg, EPA (1)
✓ Ms. Cynthia Parker, City of Phoenix (1)
Mr. Lynn Kartchner, City of Goodyear (1)



SCOTT, ALLARD & BOHANNAN, INC.
ENVIRONMENTAL & CHEMICAL CONSULTANTS

**CLEANUP OF
ALUMINUM OXIDE FINES
IMSALCO
GOODYEAR, ARIZONA**

Job No. 92010SJ

MAY 27, 1993

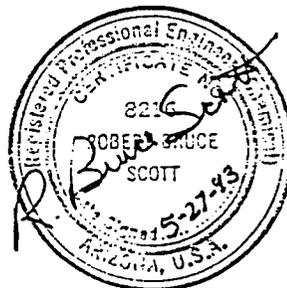


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5. CHARACTERIZATION OF OXIDE FINES MATERIAL.....	3

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Figure 2	-	Area Map
Attachment A	-	Photo Log
Attachment B	-	Height of Containment Berm Calculations



CLEANUP OF ALUMINUM OXIDE FINES
IMSALCO
GOODYEAR, ARIZONA

Job No. 92010S.J

1. INTRODUCTION

On January 7, 1993 and again on February 6, 1993 unusually heavy rainfall events occurred at the IMSALCO facility located southwest of the Phoenix-Goodyear Airport in Goodyear, Arizona. See Figure 1. Heavy winter rains in December, January and February were recorded at 10.02 inches which was 8.5 inches greater than that normal for the area.

During these events, excessive rainfall caused the berm on top of a pile of aluminum oxide fines to breach. See Photos No. 1, 2 and 3, Attachment A, Photo Log. The pile consisted of non-hazardous aluminum oxide fines. The aluminum oxide fines were deposited on top of the pile as slurry, and a small pond with bermed sides was created. This berm was breached because of the heavy rains. The water and fines flowed south and then east and onto property owned by the City of Phoenix - i.e. Phoenix-Goodyear Airport.

Because of the remote nature of the breached area (the breached sites were on the east side of the pile not normally visible to IMSALCO personnel), City of Phoenix personnel advised IMSALCO of the breaches. In both cases, Mr. Charles Boyer, Airport Manager, notified IMSALCO personnel. It was determined that a small portion of the extreme southwest corner of the Airport property was covered with aluminum oxide fines to a depth of 2 to 3 inches. See Figure 2. The material generally flowed south from the breach areas on IMSALCO property, across the corner of the Airport property and collected in a low area adjacent the railroad south of the site.

Ms. Cynthia Parker, Environmental Programs Coordinator, City of Phoenix Aviation Department contacted IMSALCO regarding the cleanup of the City of Phoenix property. Because of excessive wet conditions in the areas of the material and continued rainfall, cleanup could not immediately be done.

On March 31, 1993, Mr. Charles Ohr of the Arizona Department of Environmental Quality (ADEQ) inspected the site and met with IMSALCO staff. The area was, by that time, drying sufficiently to allow use of heavy equipment. Thus, Ms. Parker and Mr. Boyer of the City of Phoenix were again contacted, and arrangements were made to enter Airport property to clean the site.



2. **SITE CLEANUP**

Cleanup was done in seven working days and was completed April 16, 1993. Cleanup of the Airport property was done with a three-man crew utilizing hand tools. The cleaned up material was placed in a pick-up truck and returned to IMSALCO property. See Photos No. 4 and 5.

The low area where the fines collected was a tangle of grasses, weeds and salt cedars. Two front-end loaders and a dump truck were used to clean this area. All cleaned up materials were returned to IMSALCO property. Photos No. 6, 7 and 8 illustrate site conditions after cleanup.

It was estimated that a minimum of manhours were expended during the cleanup. The cost to clean the area was approximately \$8000.00.

On May 12, 1993, Ms. Parker was contacted regarding cleanup of the Airport property. Ms. Parker indicated the cleanup was acceptable to the City of Phoenix.

3. **CORRECTIVE ACTIONS**

A containment berm was installed parallel to the east side of the aluminum oxide fines pile along with a drainage ditch and road. See Photos No. 9, 10 and 11. These water retention features were contoured so as to effectively route any future runoff into a pit or retention basin which was constructed near the southeast corner of the pile. See Photos No. 12, 13 and 14. The pit will be used to collect and retain any future excess rain runoff from the east side of the pile.

The height of the containment berm along the east side of the pile was calculated to satisfy a 100-year event. Using a free board of 15 inches, the desired height of the berm was 18 inches for a 100-year, one-hour event. See Attachment B. Thus, the containment berm was constructed 18 inches high.

4. **NO DISCHARGE TO WATERS OF THE UNITED STATES**

Inspection of the site after cleanup revealed that there was *no* discharge to the waters of the United States. A natural berm or raised area impeded movement of the material further to the east (see Photo No. 15).

A low grassy area was east of this natural berm and received waters from an irrigation ditch which was on City of Phoenix property and paralleled the east side of the IMSALCO site. See Photos No. 16 and



17. Figure 2 illustrates the location of the ditch. The low grassy area drained to a culvert under the railroad and thence via a ditch south and under Highway 85. See Photos No. 18 and 19. None of these areas were involved in the cleanup and were still in a pristine state. **No** evidence of the grey-black oxide fines material was found in any of these areas. Thus, no movement of material beyond the natural berm occurred.

The origin of the ditch was traced north of the IMSALCO site (see Photo No. 20). The ditch paralleled the east side of the IMSALCO property. See Photos No. 21 and 22. The ditch continued to parallel the fence forming the west side of the Airport property and got its origin as a tail waters ditch for agricultural areas to the north. See Photos No. 23 and 24.

5. CHARACTERIZATION OF OXIDE FINES MATERIAL

The aluminum oxide fines material contains minor concentrations of unrecoverable aluminum, metal chlorides and silica (sand). The fines are being removed from the northwest portion of the second pile (west of the one breached) for sale to the cement and steel manufacturing industry. Aluminum oxide fines are used in the production of certain types of alumina-bearing Portland cements which are used to produce concrete. The steel industry also uses aluminum oxides to produce "artificial slags" which are beneficial in ladle refining and continuous casting of steel.

A sophisticated aluminum oxide fines sampling and analysis program is being conducted by IMSALCO as the oxide fines are removed for sale. See SA&B report dated February 16, 1993 and titled "Aluminum Oxide Fines Sampling and Analyses Program; IMSALCO; Goodyear, Arizona". This report was submitted to Ms. Leslie Leonard of ADEQ for her review. Composite samples representing 2105 individual samples of the oxide fines were obtained and analyzed. These samples represented production lots totaling 1677 tons of sold material.

In accordance with 40 CFR Part 261, aluminum oxide is *not* a RCRA listed or characteristic hazardous waste.

Aluminum oxide, alumina or corundum (Al_2O_3) is a naturally occurring mineral. The gems emery, ruby and sapphire are impure crystalline varieties of aluminum oxide. The mixed mineral bauxite is a hydrated form of aluminum oxide and is the ore from which aluminum metal is smelted. In addition to the production of aluminum, aluminum oxide is used in the manufacture of abrasives, refractories, ceramics, electrical insulators, catalysts, laboratory wares, adsorbents for gases, fluxes and heat-resistant fibers.



Date

Checked By

Date 5-24-93

Prepared By

RAS

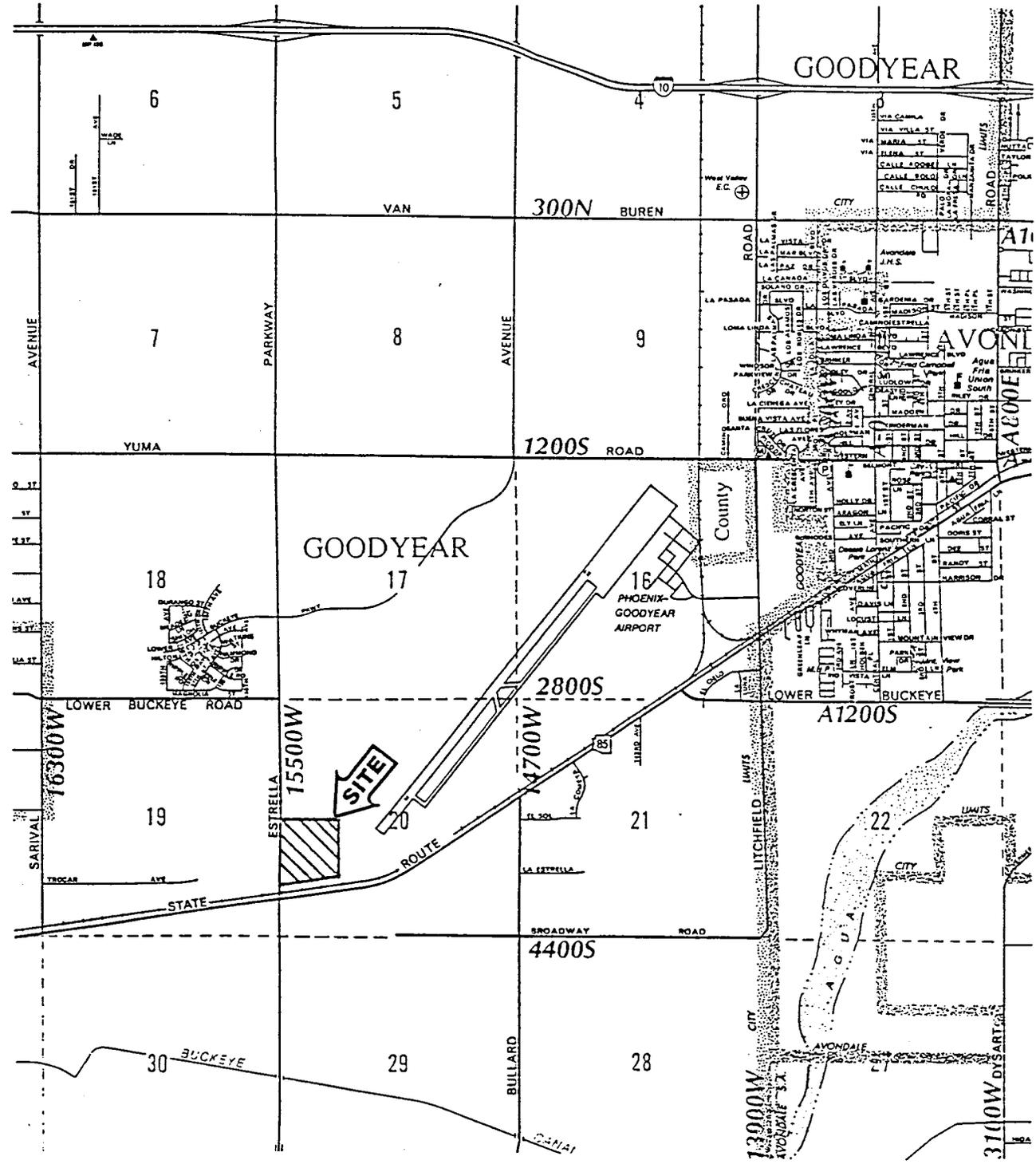


FIGURE 1
VICINITY MAP

Scott, Allard & Bohannan, Inc.
Environmental & Chemical Consultants

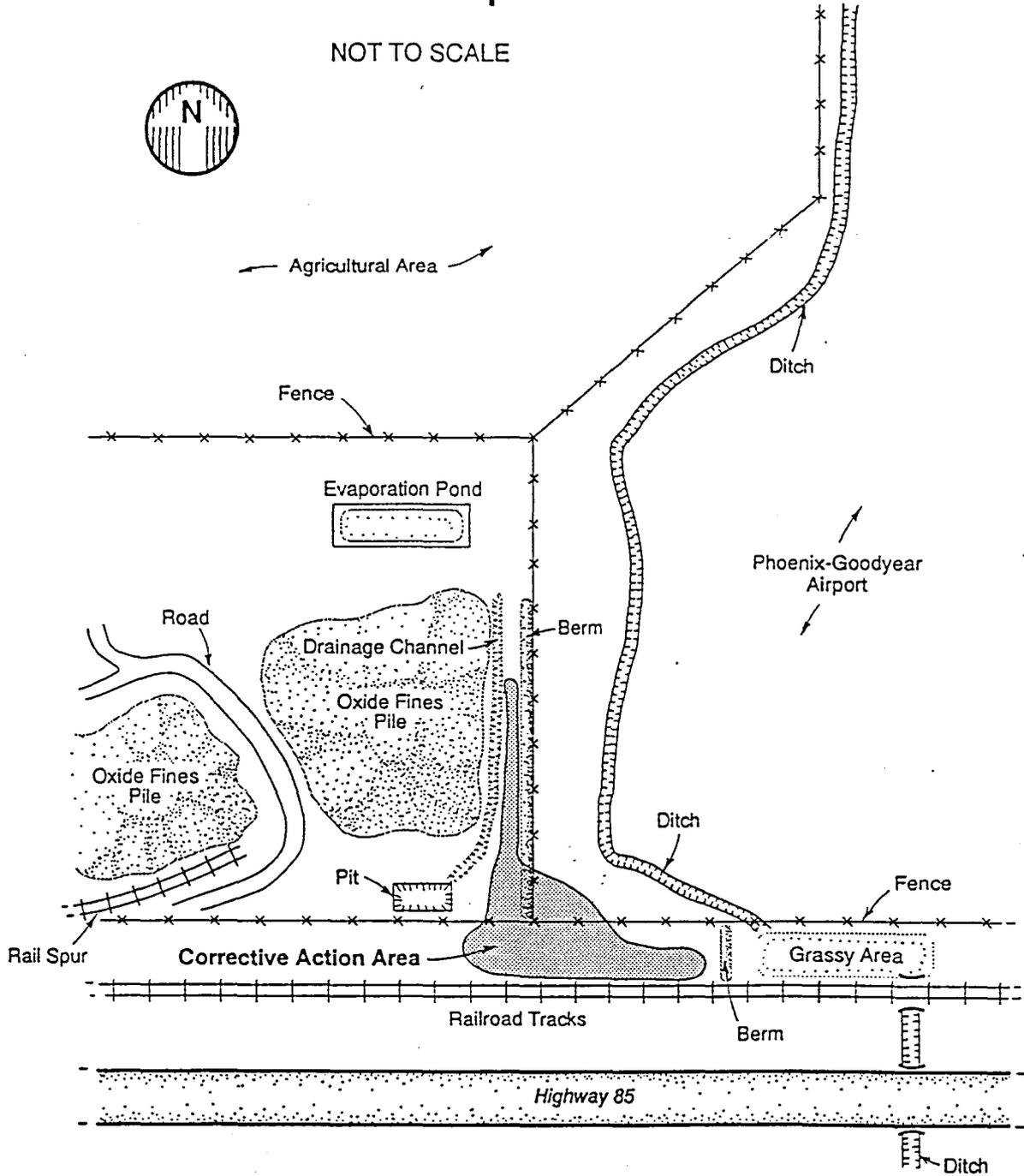
3001 W. Indian School Rd., Ste. 312
Phoenix, Arizona 85017
(602) 263-0045

Job No. 92010SJ

Date 5-27-93

Figure 2 Area Map

NOT TO SCALE



Prepared By SHERIDAN VAUGHN Checked By RAE Date 5/24/93

Scott, Allard & Bohannon, Inc.
Environmental & Chemical Consultants

3001 W. Indian School Rd., Ste. 312
Phoenix, Arizona 85017
(602) 263-0045

PHOTO LOG

Project Name: IMSALCO

Project No.: 92010SJ

Photographer: R. Bruce Scott

Date: May 7, 1993





PHOTO NO. 1
BREACH SITE



PHOTO NO. 2
CLOSE-UP OF BREACH SITE



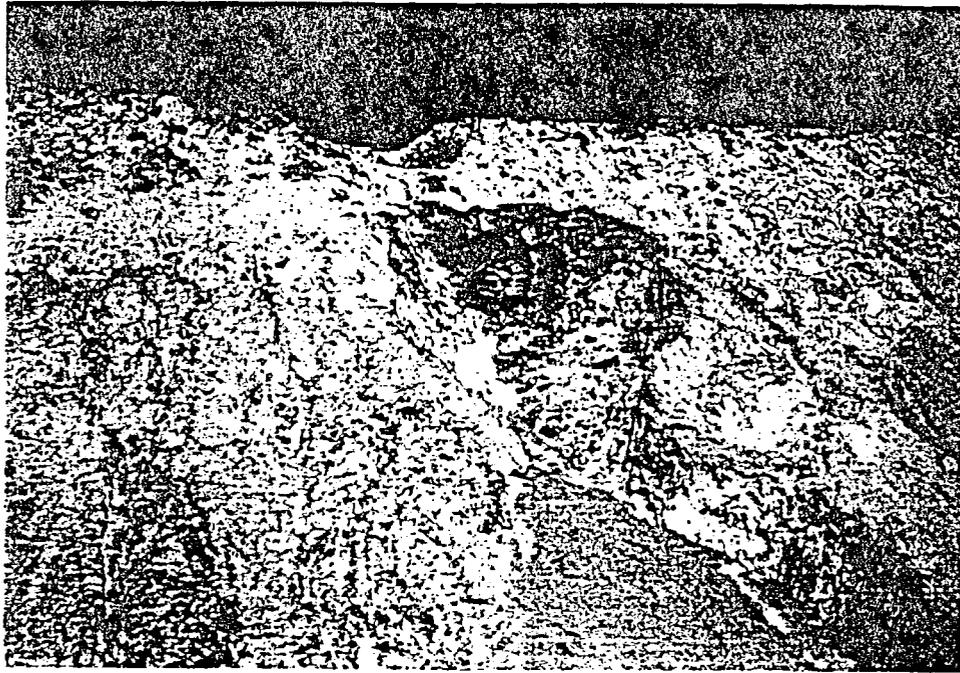


PHOTO NO. 3
SECOND BREACH AREA

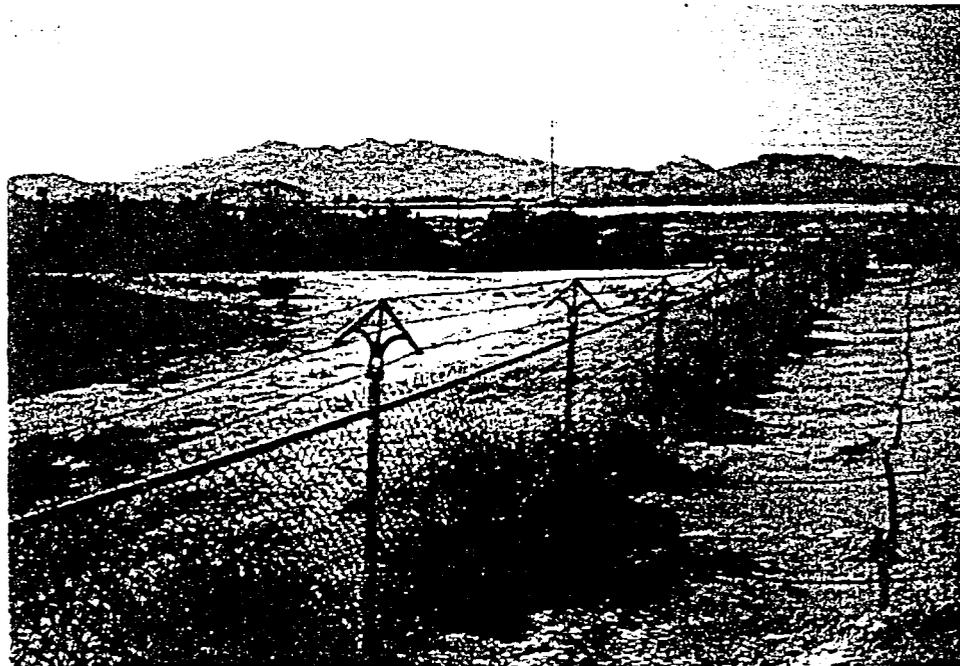


PHOTO NO. 4
EXTREME SOUTHWEST CORNER OF CITY OF PHOENIX
PROPERTY TRAVERSED BY BREACH



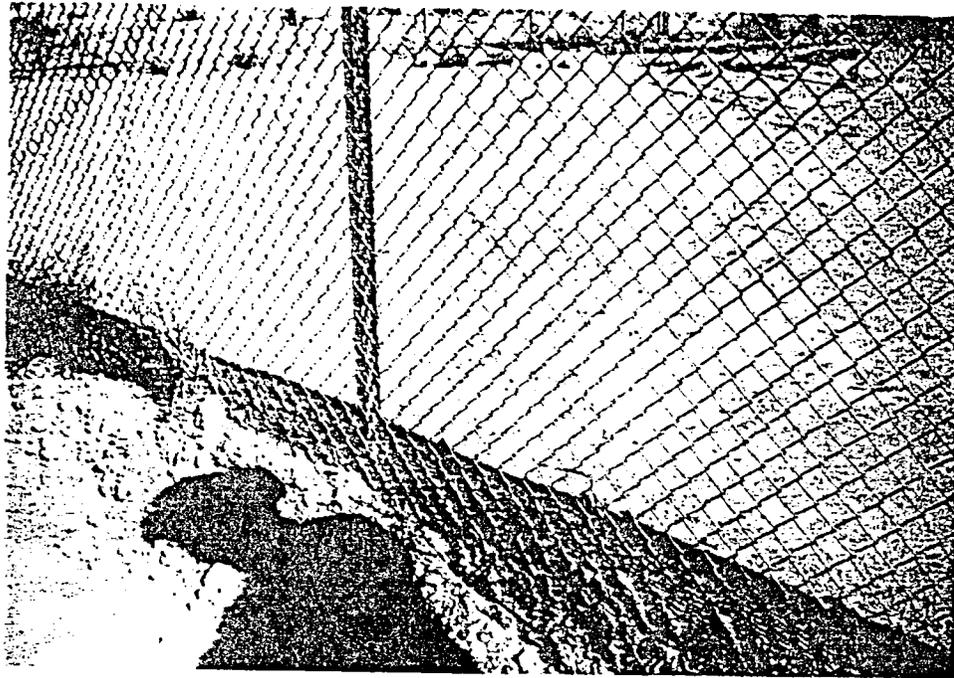


PHOTO NO. 5
CLEANED SOUTHWEST CORNER OF CITY OF PHOENIX
PROPERTY WITH MINOR OXIDE FINES RESIDUE



PHOTO NO. 6
CLEANED UP AREA AFTER BREACH





PHOTO NO. 7
ADDITIONAL CLEANED AREA



PHOTO NO. 8
EXPOSED SOIL AFTER CLEANUP



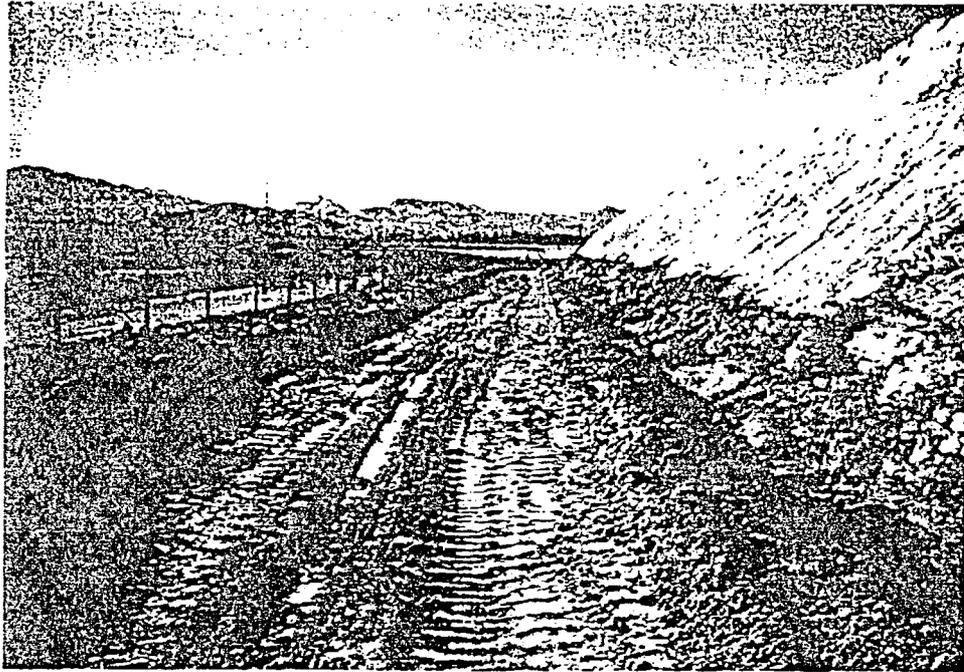


PHOTO NO. 9
EAST SIDE OF OXIDE FINES PILE SHOWING BERM AND DRAINAGE CHANNEL



PHOTO NO. 10
OXIDE FINES PILE EAST SIDE ADJACENT CITY OF PHOENIX
PROPERTY SHOWING BERM AND DRAINAGE DITCH



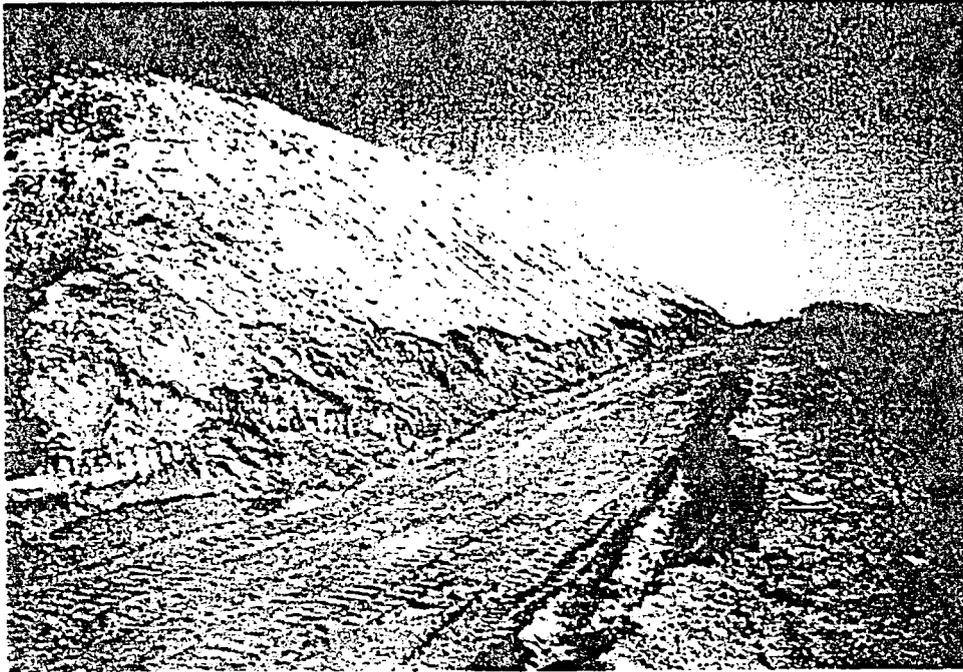


PHOTO NO. 11
OXIDE FINES PILE NEAR SOUTHEAST CORNER

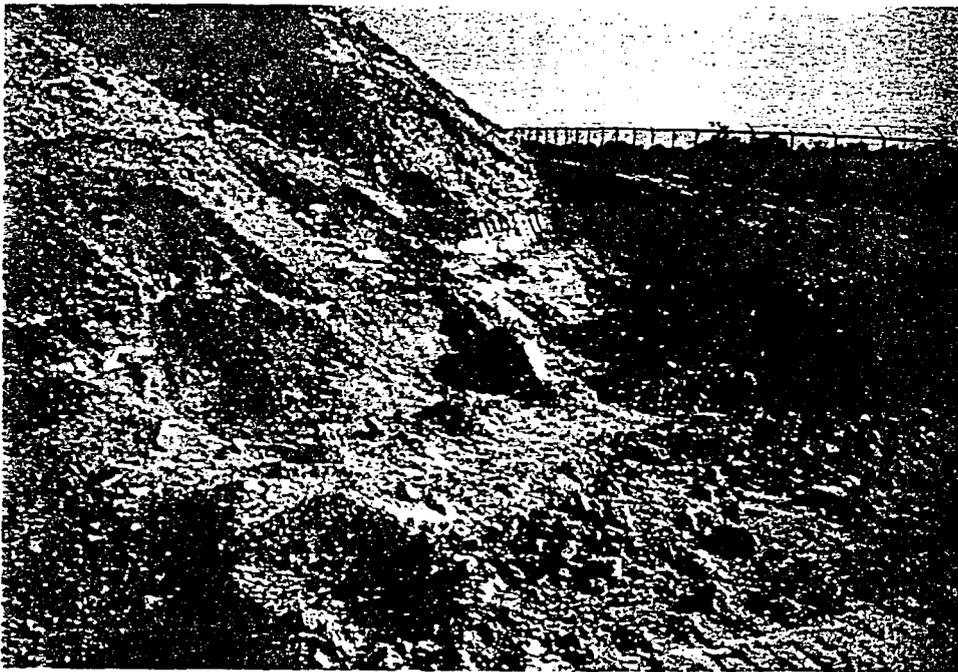


PHOTO NO. 12
DRAINAGE CHANNEL NEAR SOUTHEAST CORNER OF OXIDE FINES PILE



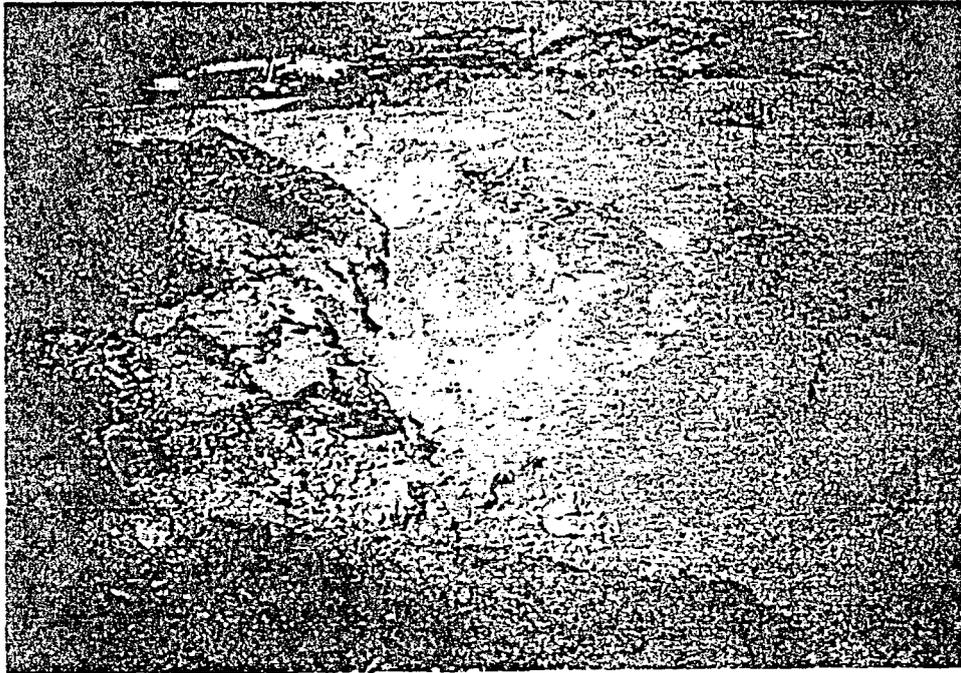


PHOTO NO. 13
EXTENSION OF DRAINAGE CHANNEL



PHOTO NO. 14
RETENTION BASIN FOR STORMWATER RUNOFF



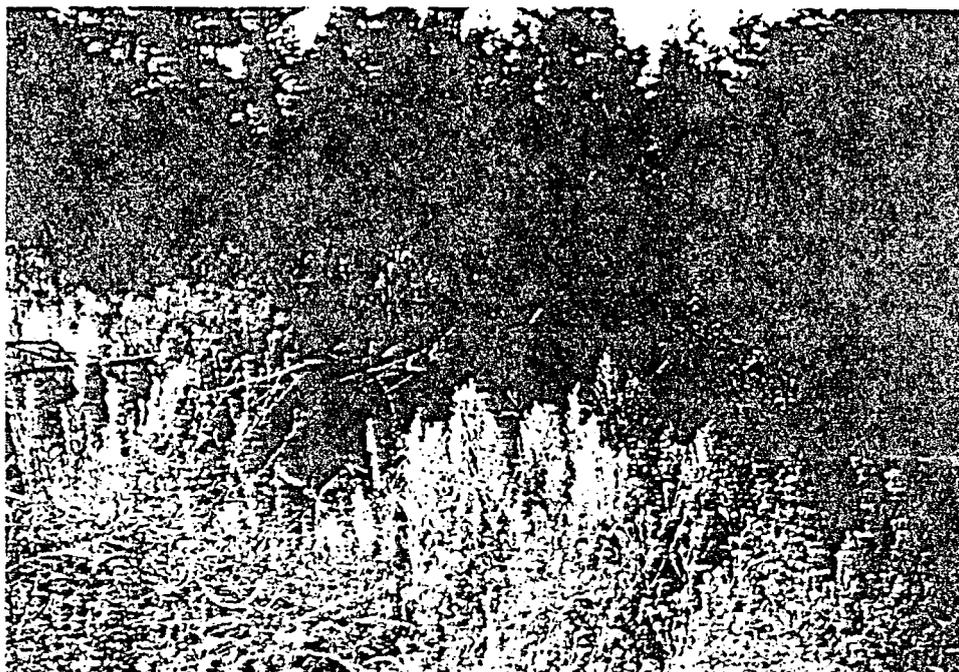


PHOTO NO. 15
EARTH BERM AND DEBRIS AT EAST END OF CLEANED AREA



PHOTO NO. 16
GRASSY AREA SOUTH OF CITY OF PHOENIX PROPERTY AND EAST OF CLEANED AREA;
RAILROAD RIGHT-OF-WAY; DRAINAGE AREA FOR IRRIGATION DITCH





PHOTO NO. 17
DRAINAGE AREA FOR IRRIGATION DITCH SOUTH OF SITE



PHOTO NO. 18
IRRIGATION DITCH AT RAILROAD CULVERT
NOTE: NO OXIDE FINES





PHOTO NO. 19
DITCH BETWEEN RAILROAD AND HIGHWAY 85

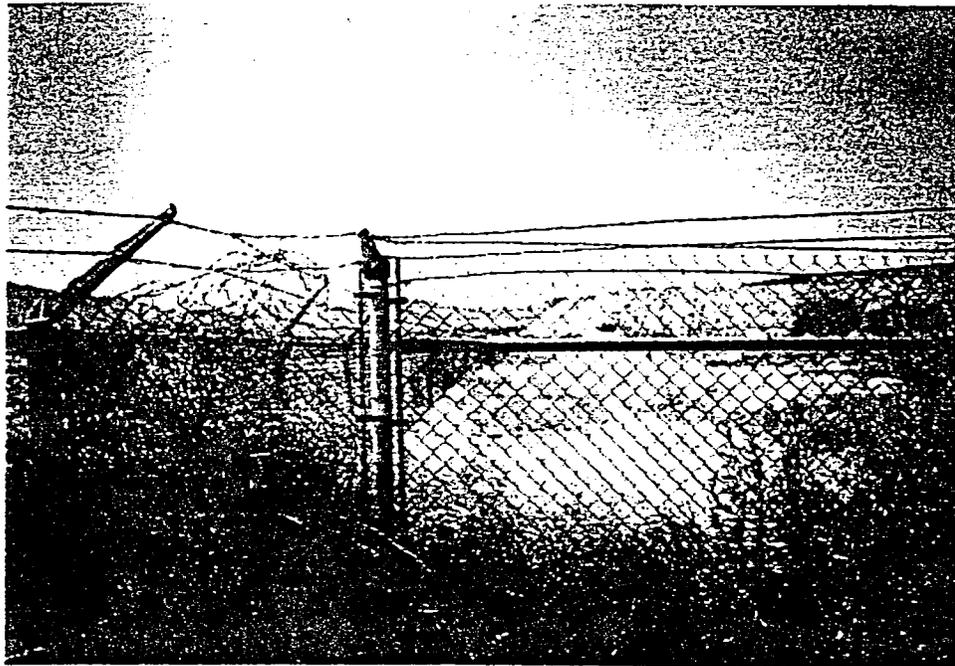


PHOTO NO. 20
VIEW SOUTH FROM NORTHEAST CORNER OF SITE





PHOTO NO. 21
CITY OF PHOENIX PROPERTY FROM NORTHEAST CORNER OF SITE;
NOTE: DITCH ON CITY OF PHOENIX PROPERTY PARALLELING EAST SIDE OF SITE



PHOTO NO. 22
DITCH PARALLELING EAST SIDE OF SITE





PHOTO NO. 23
DITCH 1 TO 1½ MILES NORTH OF SITE

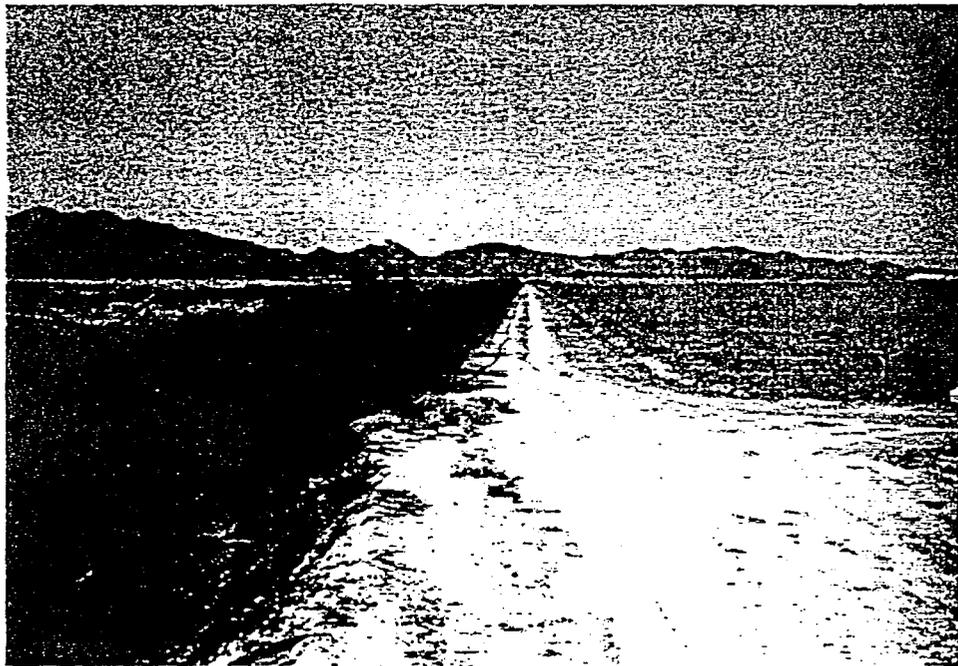


PHOTO NO. 24
VIEW SOUTH 1 TO 1½ MILES NORTH OF SITE





MEMO

To: G. Kulik

Date: April 8, 1993

From: H. C. Johns

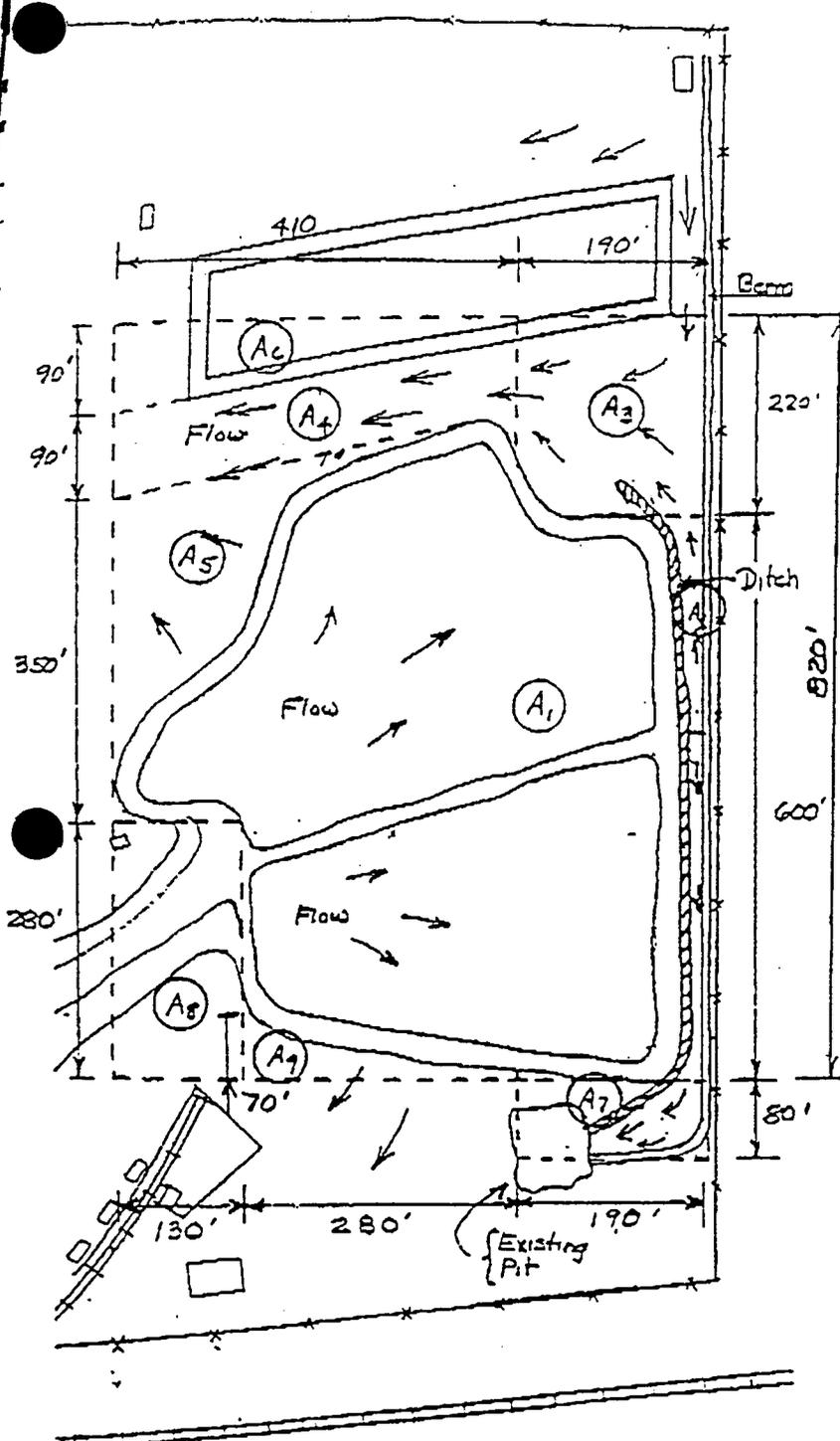
Subject: IMSALCO Containment Berm Calculations

Enclosed is the containment berm calculation with sketch. The calculation is based on Maricopa County's 100 year flood design value 3" event over a one hour period. Engineering recommends a minimum 18" high x 5' wide berm be constructed next to the east fence line with a road and 2' deep x 7' wide ditch located between the berm and toe of the oxide pile. The road and ditch should be sloped and graded to assist natural drainage of water and solids to the north and west and also to the south. This should provide adequate protection for future run off.

H.C. Johns
H. C. Johns

HCJ/rkm

Enclosures



Assumptions

- (1) Rainfall 3" over 1Hr Period (Maricopa Co.)
- (2) Rational Method
- (3) C = 0.35 Run off Coefficient
- (4) Assume Water Standing in Retention Area
- (5) Berm Freeboard Height = 15"

Calculations

① Areas (SF)

- $A_T = \text{Tot Area} = 820 \times 600 + 820 \times 190 = 507,200 \text{ SF}$
- $A_2 = \text{East Side} = 600' \times 20' = 12,000 \text{ SF}$
- $A_3 = \text{NE Corner} = 220' \times 190' = 41,800 \text{ SF}$
- $A_4 = \text{N. Side} = 90 \times 420 \sin 78^\circ = 36,973 \text{ SF}$
- $A_5 = \text{N.W. Corner} = \frac{1}{2}(350)(220) = 38,500 \text{ SF}$
- $A_6 = \text{Emp Pond} = \frac{1}{2}(410)(10) = 18,450 \text{ SF}$
- $A_7 = \text{SE Corner} = 190(80) = 15,200 \text{ SF}$
- $A_8 = \text{SW Corner} = 280(130) = 36,400 \text{ SF}$
- $A_9 = \text{South Side} = \frac{1}{2}(70)280 = 9800 \text{ SF}$

② Pile Area (A_i)

$$A_i = A_T - \sum \text{Ground Area} = A_T - \sum A_2 - \dots$$

$$A_i = 507,200 - 12,000 - 41,800 - 36,973 - 38,500 - 18,450 - 15,200 - 36,400 - 9800$$

$$A_i = 507,200 - 209,123$$

$$A_i = 298,077 \text{ SF}$$

③ Rain Run off Total Area

Q = Run off (CFS)
 C = 0.35 Run off Coefficient
 i = 3" Rain Intensity
 $A_T = 507,200 \text{ SF} / 43,560 \text{ SF/Acre}$

$$Q_T = C i A_T = 0.35(3) \left(\frac{507,200}{43,560} \right)$$

$$Q = 12.23 \text{ CFS}$$

$$\text{Vol} = Q (3600) = 12.23(3600)$$

$$\text{Vol} = 44,013 \text{ C.F. water}$$

④ Water Height

$$WH = \frac{\text{Water Vol}}{\sum \text{Ground Area}} = \frac{44,013 \text{ CF water}}{209,123 \text{ SF Area}}$$

$$WH = 0.210 \text{ ft} (12 \text{ in/ft}) =$$

$$WH = 2.53 \text{ inches} \approx 2.6 \text{ inches}$$

⑤ Berm Height

BH = Water Height + Free board

$$B.H_i = 2.6 + 15$$

$$B.H = 17.6" \approx \boxed{18 \text{ inches}}$$

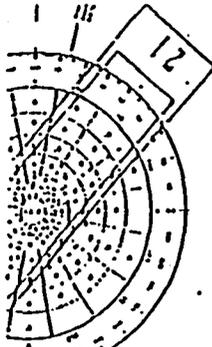
Situate in Maricopa County, Arizona:

A parcel located in the East half of the Northwest quarter of Section Twenty (20), Township One (1) North, Range One (1) West of the Gila and Salt River Base and Meridian, Maricopa County, Arizona, and is more particularly described as follows:

BEGINNING at a 1/2 inch diameter iron bar at the Northeast corner of said Northwest quarter; thence South 00 degrees 31 minutes 50 seconds West, 356.40 feet along the East line of said Northwest quarter to the TRUE POINT OF BEGINNING; thence South 00 degrees 31 minutes 50 seconds West, 813.31 feet along said East line; thence South 41 degrees 35 minutes 34 seconds West, 982.87 feet; thence North 51 degrees 52 minutes 35 seconds West, 436.69 feet; thence North 38 degrees 07 minutes 25 seconds East, 1625.51 feet to the TRUE POINT OF BEGINNING.

14.175 Acres

ATTACHMENT "G"
~~EXHIBIT "B"~~



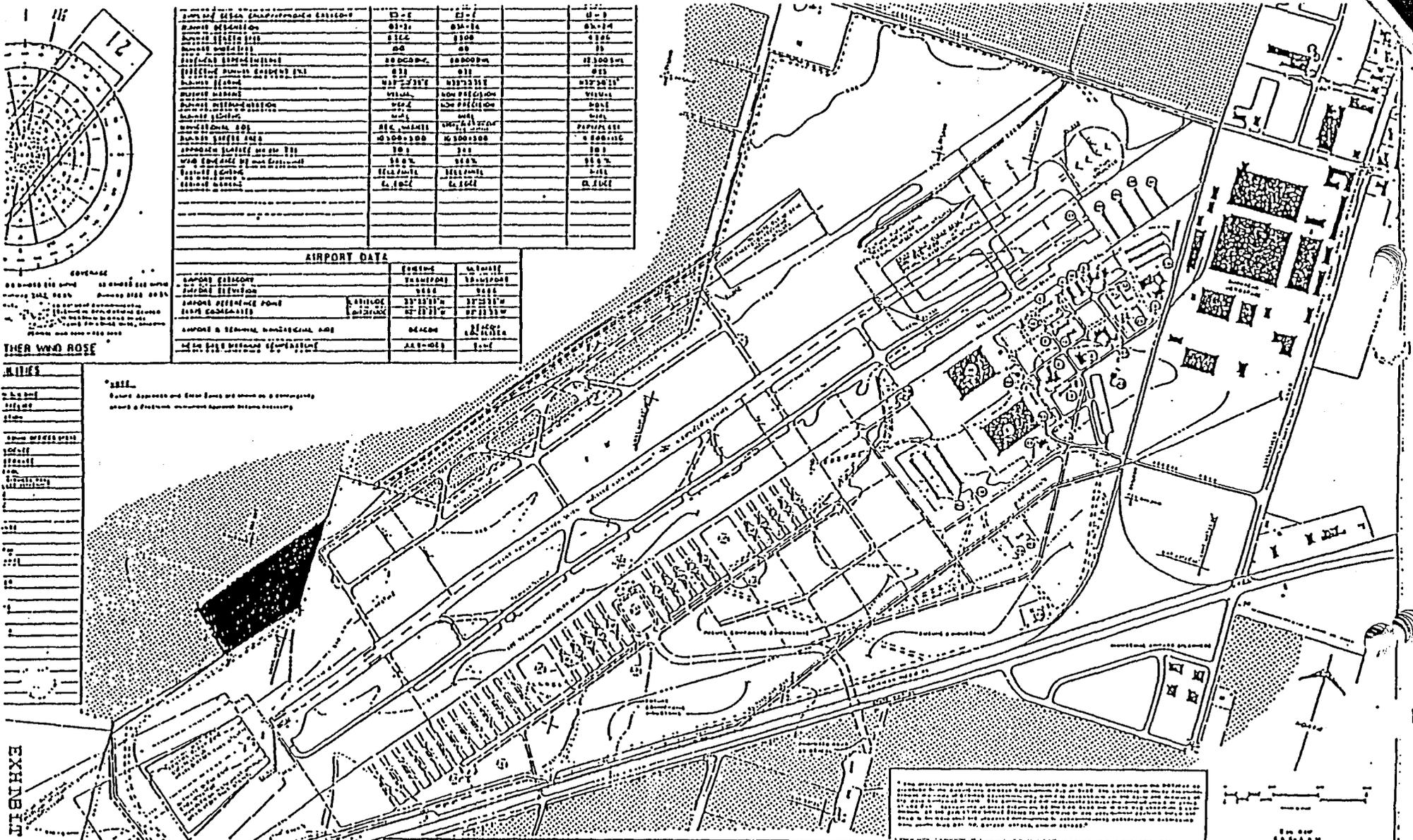
Item	Value	Value	Value
Runway 15L	15000' x 150'	ASPH	15000'
Runway 15R	15000' x 150'	ASPH	15000'
Runway 16	15000' x 150'	ASPH	15000'
Runway 17	15000' x 150'	ASPH	15000'
Runway 18	15000' x 150'	ASPH	15000'
Runway 19	15000' x 150'	ASPH	15000'
Runway 20	15000' x 150'	ASPH	15000'
Runway 21	15000' x 150'	ASPH	15000'
Runway 22	15000' x 150'	ASPH	15000'
Runway 23	15000' x 150'	ASPH	15000'
Runway 24	15000' x 150'	ASPH	15000'
Runway 25	15000' x 150'	ASPH	15000'
Runway 26	15000' x 150'	ASPH	15000'
Runway 27	15000' x 150'	ASPH	15000'
Runway 28	15000' x 150'	ASPH	15000'
Runway 29	15000' x 150'	ASPH	15000'
Runway 30	15000' x 150'	ASPH	15000'
Runway 31	15000' x 150'	ASPH	15000'
Runway 32	15000' x 150'	ASPH	15000'
Runway 33	15000' x 150'	ASPH	15000'
Runway 34	15000' x 150'	ASPH	15000'
Runway 35	15000' x 150'	ASPH	15000'
Runway 36	15000' x 150'	ASPH	15000'
Runway 37	15000' x 150'	ASPH	15000'
Runway 38	15000' x 150'	ASPH	15000'
Runway 39	15000' x 150'	ASPH	15000'
Runway 40	15000' x 150'	ASPH	15000'
Runway 41	15000' x 150'	ASPH	15000'
Runway 42	15000' x 150'	ASPH	15000'
Runway 43	15000' x 150'	ASPH	15000'
Runway 44	15000' x 150'	ASPH	15000'
Runway 45	15000' x 150'	ASPH	15000'
Runway 46	15000' x 150'	ASPH	15000'
Runway 47	15000' x 150'	ASPH	15000'
Runway 48	15000' x 150'	ASPH	15000'
Runway 49	15000' x 150'	ASPH	15000'
Runway 50	15000' x 150'	ASPH	15000'

AIRPORT DATA		
Runway 15L	15000'	15000'
Runway 15R	15000'	15000'
Runway 16	15000'	15000'
Runway 17	15000'	15000'
Runway 18	15000'	15000'
Runway 19	15000'	15000'
Runway 20	15000'	15000'
Runway 21	15000'	15000'
Runway 22	15000'	15000'
Runway 23	15000'	15000'
Runway 24	15000'	15000'
Runway 25	15000'	15000'
Runway 26	15000'	15000'
Runway 27	15000'	15000'
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Runway 31	15000'	15000'
Runway 32	15000'	15000'
Runway 33	15000'	15000'
Runway 34	15000'	15000'
Runway 35	15000'	15000'
Runway 36	15000'	15000'
Runway 37	15000'	15000'
Runway 38	15000'	15000'
Runway 39	15000'	15000'
Runway 40	15000'	15000'
Runway 41	15000'	15000'
Runway 42	15000'	15000'
Runway 43	15000'	15000'
Runway 44	15000'	15000'
Runway 45	15000'	15000'
Runway 46	15000'	15000'
Runway 47	15000'	15000'
Runway 48	15000'	15000'
Runway 49	15000'	15000'
Runway 50	15000'	15000'

- 1. Runway 15L
- 2. Runway 15R
- 3. Runway 16
- 4. Runway 17
- 5. Runway 18
- 6. Runway 19
- 7. Runway 20
- 8. Runway 21
- 9. Runway 22
- 10. Runway 23
- 11. Runway 24
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- 26. Runway 39
- 27. Runway 40
- 28. Runway 41
- 29. Runway 42
- 30. Runway 43
- 31. Runway 44
- 32. Runway 45
- 33. Runway 46
- 34. Runway 47
- 35. Runway 48
- 36. Runway 49
- 37. Runway 50

Notes:
 1. All dimensions are in feet.
 2. All bearings are true bearings.
 3. All distances are in feet.
 4. All areas are in square feet.
 5. All volumes are in cubic feet.

EXHIBIT



LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
(Symbol)	Runway 15L	(Symbol)	Runway 15R
(Symbol)	Runway 16	(Symbol)	Runway 17
(Symbol)	Runway 18	(Symbol)	Runway 19
(Symbol)	Runway 20	(Symbol)	Runway 21
(Symbol)	Runway 22	(Symbol)	Runway 23
(Symbol)	Runway 24	(Symbol)	Runway 25
(Symbol)	Runway 26	(Symbol)	Runway 27
(Symbol)	Runway 28	(Symbol)	Runway 29
(Symbol)	Runway 30	(Symbol)	Runway 31
(Symbol)	Runway 32	(Symbol)	Runway 33
(Symbol)	Runway 34	(Symbol)	Runway 35
(Symbol)	Runway 36	(Symbol)	Runway 37
(Symbol)	Runway 38	(Symbol)	Runway 39
(Symbol)	Runway 40	(Symbol)	Runway 41
(Symbol)	Runway 42	(Symbol)	Runway 43
(Symbol)	Runway 44	(Symbol)	Runway 45
(Symbol)	Runway 46	(Symbol)	Runway 47
(Symbol)	Runway 48	(Symbol)	Runway 49
(Symbol)	Runway 50	(Symbol)	Runway 51

FOR APPROVAL OF THE CITY OF PHOENIX

PHOENIX-LITCHFIELD MUNICIPAL AIRPORT

AIRPORT LAYOUT PLAN

GOODYEAR, ARIZONA

DATE: 1/1/55

BY: [Signature]

PHOENIX-LITCHFIELD MUNICIPAL AIRPORT

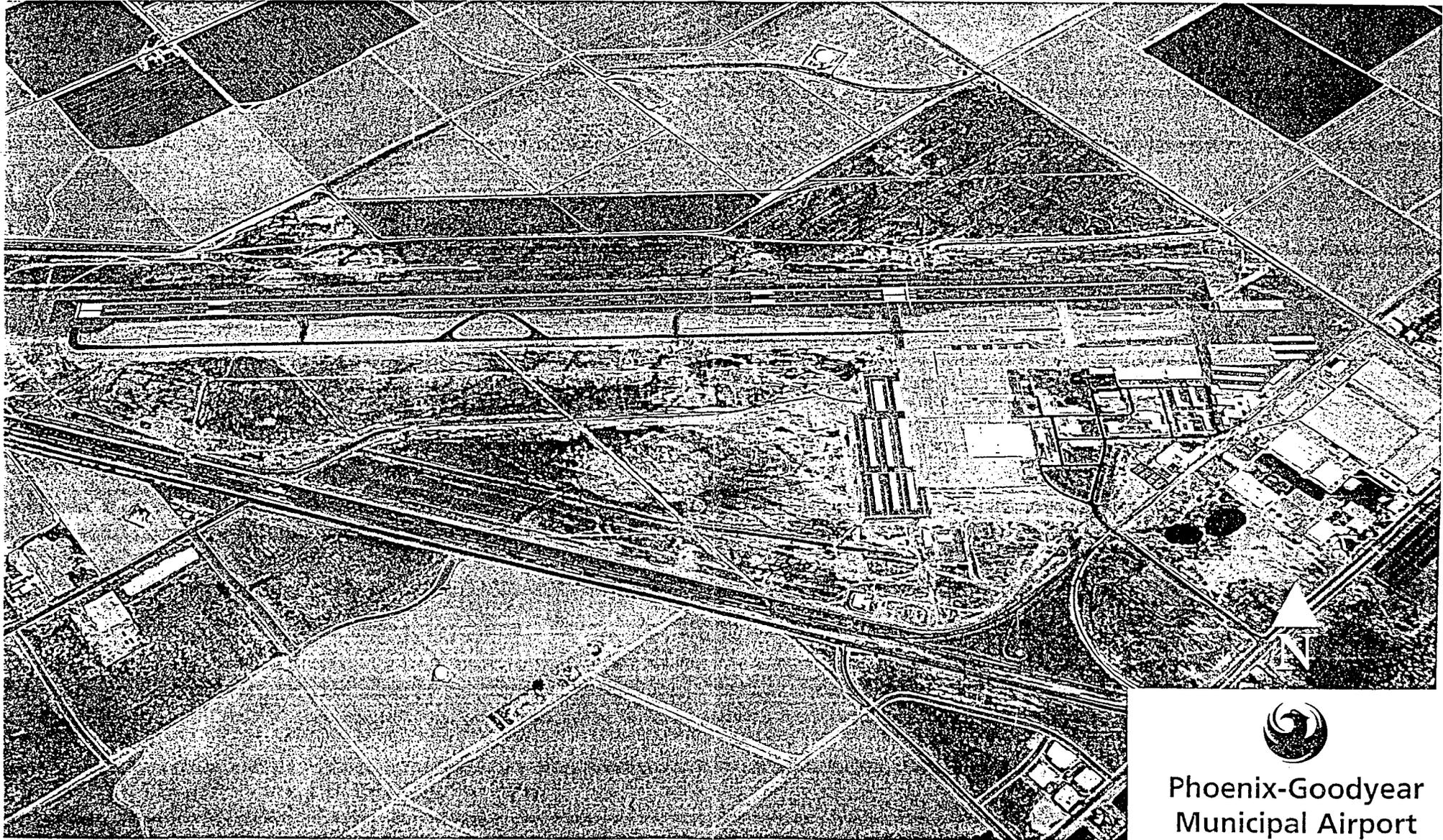
AIRPORT LAYOUT PLAN

GOODYEAR, ARIZONA

DATE: 1/1/55

BY: [Signature]

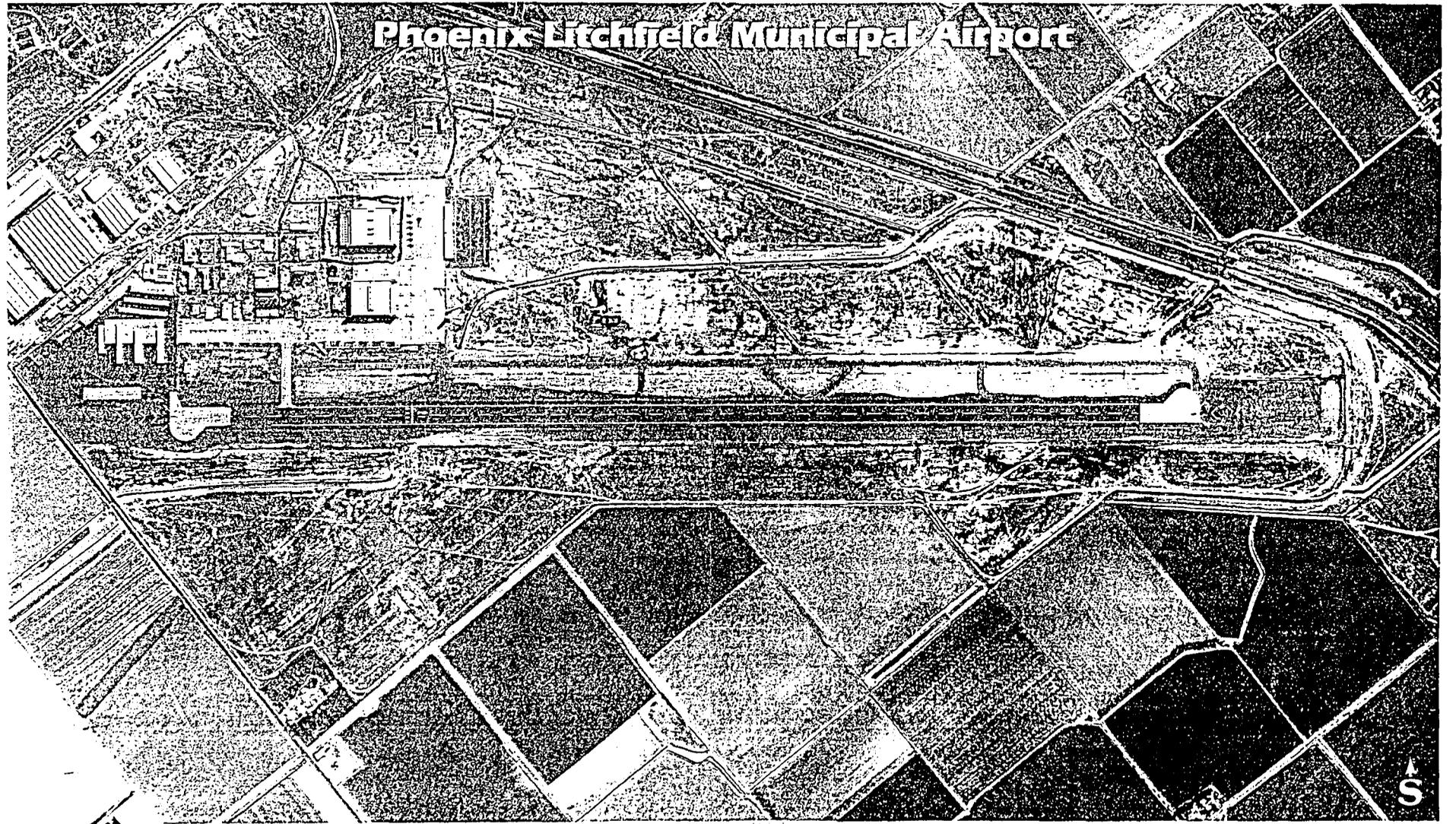
PAGE 1 OF 7



Phoenix-Goodyear
Municipal Airport

ATTACHMENT "H"

Phoenix Litchfield Municipal Airport



S



City of Phoenix

To: Dennis Kane, Safety Analyst
Aviation Department

From: Monica Ratcliff,^{MR} Industrial Hygienist
Safety Division, Personnel Department

Subject: Pesticides

Date: May 9, 1991
9105021

As per your request, I have done a basic check on the listed chemicals. The reference I used is The Farm Chemicals Handbook '90, Meister Publishing Company, Willoughby, Ohio.

You asked me to check into whether the continued use of the pesticides would be environmentally advisable. It is not possible to determine from the list if the quantities applied are appropriate. Because all of these pesticides are regulated by the EPA, the important factor is whether or not the operator applies them in accordance with the label directions. We cannot determine this without more information or taking samples. The labeling on pesticides gives detailed instructions, as well as toxicity and environmental guidelines.

I can tell you which of the pesticides are listed by the EPA as restricted use pesticides: Guthion, Terraclor Super-X, Methyl Parathion-4, Desiccant L-10, and Monitor 4. Anyone who purchases or applies these for agricultural use must be certified by the Arizona Department of Agriculture, Environmental Services Division. You should check with them at 542-4373 to check the status of this pesticide applicator.

A reference I use regarding pesticides is:

Edwin W. Minch, Environmental Specialist
Office of the State Chemist, P. O. Box 1586, Mesa, Arizona 85211
(602) 833-5442

I have attached my notes. I hope they are of use to you.

MR:cr
Enc.

ATTACHMENT "I"

PAV-00006377

① Athon - Azinphos - Methyl

Organophosphate

Restricted - Class I

Toxic to bees

② EDTA 97% zinc Chelate

③ Nitro - Sul

④ A-sana XL - Broad Spectrum insecticide. Restr. Class II

Esfenvalerate

⑤ Lock-On: Chlorpyrifos Warning or Caution (Class II or III)

depending on formulation

Organophosphate

⑥ Unocal Plus ?

Bivert Non toxic, non-regulated anti foaming, buffer,

drift retardant

⑦ Orthene 90 S - Acephate

Organophosphate

Class III

Toxic to Birds

⑧ D.E. 6 - Organophosphorous Compound - defoliant

Class II

(9) Desiccant L-10 - Arsenic Acid
Class I Herbicide Restricted Use

(10) Diazinon - Phosphorothiate Insecticide
Class II or III depending on formulation

(11) Dimethoate - Algicide
Systemic Insecticide - acaricide
Class II

(12) Dropp 50 - thidiazuron
Plant Growth Regulator, defoliant
Class III Caution

(13) Urea L₂ B: 46% - fertilizer

(14) Link 44 - ?

(15) Mor-Act Adjuvant - MSDS

(16) Monitor 4 - Methamidophos
Insecticide, acaricide
Class I Restricted Use

(17) Methyl Parathion 4 -
Organophosphate Insecticide
Danger Class I Restricted

Penn-cap M - Methyl parathion - microencapsulated

Restricted

Warning - Class III }?

Prowl - Pendimethalin

Denitroaniline, selective herbicide

Warning - Class III

R-11 Spreader-Activator

Round-~~up~~ Up

Non-selective, postemergence herbicide

Class ~~III~~^{II} - Warning

Serrasol Super-7 - Etridiazole

Soil fungicide, nitrification inhibitor

As emulsifiable concentrate - Danger

granules

Caution Class III

Tri-Jol -

True-Fully Zinc

UN-32

LLIS COMPANY

Customer History Report
Period: 01/01/90 to 12/31/90

Product	Date	Ref #	Quantity	Size	Unit	Ship
BIVERT	08/09/90	42875	4.00	1.00	GA	
BIVERT	08/16/90	43041	4.00			
		Total	8.00**			
BIVERT	08/09/90	42875	1.00	5.00	GA	
		Total	1.00**			
BIVERT	08/16/90	43041	2.00	2.50	GA	
		Total	2.00**			
DEF 6	09/13/90	43738	3.00	5.00	GA	
		Total	3.00**			
DESICCANT L-10	10/06/90	44207	27.00	1.00	GA	
		Total	27.00**			
DIAZINON 4 SPRAY	08/29/90	43393	1.00	1.00	GA	
		Total	1.00**			
DIMETHOATE 267	07/26/90	42480	11.00	5.00	GA	
		Total	11.00**			
DIMETHOATE 267	07/26/90	42480	1.00	2.50	GA	
		Total	1.00**			
DROPP 50 WP	09/13/90	43739	1.00	5.00	LB	
		Total	1.00**			
UREA LO BI 46%	05/23/90	41508	17.00	55.00	LB	
UREA LO BI 46%	06/21/90	41850	28.00			
UREA LO BI 46%	07/12/90	42162	28.00			
UREA LO BI 46%	07/19/90	42340	28.00			
		Total	101.00**			
LINK 44	06/21/90	41850	3.00	5.00	GA	
		Total	3.00**			
LINK 44	05/23/90	41508	155.00	0.00	GA	
LINK 44	06/21/90	41850	110.00			
		Total	265.00**			
MOR-ACT ADJUVANT	05/23/90	41508	4.00	1.00	GA	
MOR-ACT ADJUVANT	06/21/90	41850	4.00			
MOR-ACT ADJUVANT	09/13/90	43739	4.00			
		Total	12.00**			
MOR-ACT ADJUVANT	09/13/90	43738	6.00	2.50	GA	
		Total	6.00**			
MONITOR 4	08/16/90	43041	10.00	5.00	GA	
		Total	10.00**			

Product		Date	Ref #	Quantity	Size Unit	Shi
COTTON, PIMA S-6 NU FLOW ND		03/28/90	40672	-8.00		
			Total	22.00**		
GUTHION 2 L	MOBA	07/19/90	42340	16.00	5.00 GA	
GUTHION 2 L	MOBA	08/03/90	42715	16.00		
GUTHION 2 L	MOBA	08/09/90	42875	19.00		
GUTHION 2 L	MOBA	08/30/90	43403	16.00		
			Total	67.00**		
EDTA 9% ZINC CHELATE	UAP	02/05/90	40050	1.00	2.50 GA	
EDTA 9% ZINC CHELATE	UAP	02/06/90	40062	-1.00		
EDTA 9% ZINC CHELATE	UAP	02/06/90	40062	1.00		
			Total	1.00**		
EDTA 9% ZINC CHELATE	UAP	02/05/90	40050	15.00	5.00 GA	
EDTA 9% ZINC CHELATE	UAP	02/06/90	40062	-15.00		
EDTA 9% ZINC CHELATE	UAP	02/06/90	40062	15.00		
			Total	15.00**		
NITRO-SUL (20-0-0-45)		06/15/90	41756	6100.00	0.00 LB	
NITRO-SUL (20-0-0-45)		07/23/90	42391	8570.00		
NITRO-SUL (20-0-0-45)		07/23/90	42392	6100.00		
			Total	20770.00**		
ASANA XL	DPNT	07/26/90	42480	2.00	1.00 GA	
			Total	2.00**		
ASANA XL	DPNT	07/26/90	42480	4.00	2.50 GA	
			Total	4.00**		
LOCK-ON	DOW	07/12/90	42162	30.00	2.50 GA	
			Total	30.00**		
UNOCAL PLUS	UNCL	07/26/90	42480	533.00	0.00 GA	
UNOCAL PLUS	UNCL	08/03/90	42715	610.00		
			Total	1143.00**		
BIVERT	WECO	08/23/90	43207	9.00	1.00 GA	
BIVERT	WECO	08/30/90	43403	4.00		
			Total	13.00**		
BIVERT	WECO	08/30/90	43403	1.00	5.00 GA	
			Total	1.00**		
ORTHENE 90 S...	VLNT	06/21/90	41850	8.00	20.00 LB	
			Total	8.00**		
COTTON, S1001	ELIS	03/07/90	40249	20.00	50.00 LB	
			Total	20.00**		

1/91

Product		Date	Ref #	Quantity	Size	Unit
METHYL PARATHION 4 SPRAY	WECO	08/23/90	43207	16.00	5.00	GA
			Total	16.00**		
NITRO-SUL (20-0-0-40)		03/20/90	40503	4940.00	0.00	LB
NITRO-SUL (20-0-0-40)		05/02/90	41181	8730.00		
			Total	13670.00**		
PENNCAP M	PENN	05/23/90	41508	8.00	5.00	GA
			Total	8.00**		
PROWL	AMCY	02/05/90	40050	60.00	0.00	GA
PROWL	AMCY	02/06/90	40062	-60.00		
PROWL	AMCY	02/06/90	40062	60.00		
			Total	60.00**		
R-11 SPREADER-ACTIVATOR	WECO	02/05/90	40050	2.00	1.00	GA
R-11 SPREADER-ACTIVATOR	WECO	02/06/90	40062	-2.00		
R-11 SPREADER-ACTIVATOR	WECO	02/06/90	40062	2.00		
			Total	2.00**		
ROUNDUP	MONS	02/01/90	40031	1.00	2.50	GA
ROUNDUP	MONS	08/29/90	43393	1.00		
			Total	2.00**		
TERRACLOR SUP X 20-SDUST W/GRA		03/21/90	40547	6.00	25.00	LB
			Total	6.00**		
TRI-FOL	WECO	07/12/90	42162	2.00	1.00	GA
TRI-FOL	WECO	07/19/90	42340	1.00		
TRI-FOL	WECO	07/26/90	42480	2.00		
TRI-FOL	WECO	08/03/90	42715	2.00		
TRI-FOL	WECO	08/09/90	42875	2.00		
TRI-FOL	WECO	08/16/90	43041	1.00		
			Total	10.00**		
TRUE-FULLY ZINC 10%	STLR	02/05/90	40050	6.00	5.00	GA
TRUE-FULLY ZINC 10%	STLR	02/06/90	40062	-6.00		
TRUE-FULLY ZINC 10%	STLR	02/06/90	40062	6.00		
			Total	6.00**		
UN-32		06/15/90	41758	8570.00	0.00	LB
UN-32		06/15/90	41769	13090.00		
			Total	21660.00**		
COTTON, D&PL 90 NU FLOW ND		03/08/90	40284	40.00	50.00	LB
COTTON, D&PL 90 NU FLOW ND		04/02/90	40723	18.00		
COTTON, D&PL 90 NU FLOW ND		04/25/90	41080	-3.00		
			Total	55.00**		
COTTON, PIMA S-6 NU FLOW ND		03/12/90	40336	15.00	50.00	LB
COTTON, PIMA S-6 NU FLOW ND		03/16/90	40427	15.00		



Environmental
Engineers and Scientists

AND ASSOCIATES, INC.

982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
FAX (614) 841-4660

*Goodyear Tire Federal
Superfund*

RECEIVED

MAR 14 AM 9:09

ENVIRONMENTAL PROGRAMS

March 10, 1995

Mr. Craig Cooper
Remedial Project Manager
U.S. EPA Region 9 H-7-2
75 Hawthorne Street
San Francisco, CA 94105

Subject: Transmittal of February 1995 Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site, Goodyear, Arizona

Dear Mr. Cooper:

Attached is the monthly progress report for February 1995 for the PGA site in Goodyear, Arizona. This report is being submitted on behalf of the Goodyear Tire & Rubber Company (Goodyear) to fulfill the reporting requirements outlined in the consent decree. Activities conducted this month included:

- Collecting groundwater measurements from Subunit A wells (February 23, 1995);
- Collecting monthly ground water samples from wells EMW-15, EMW-16, and COG#11;
- Continuing rebound of Polygon 84;
- Continuing operation of the Northern Subunit C system;
- Continuing operation of the Southern Subunit C system;
- Re-developing wells I-101 and I-102;
- Conducting an extended pumping test on well E-17 to verify the decreasing chromium concentration trends on prior tests;
- Receiving well pump for installation in E-16 (installation is scheduled for 3/21/95);
- Continuing preparation of the Final Ground Water Monitoring plan for the entire site; and
- Evaluating the air sparging test in Polygon 84 to determine the viability of sparging within Subunit A to accelerate the overall length of remediation.

If you have any questions, please feel free to call me.

Sincerely,
SHARP AND ASSOCIATES, INC.

Todd Struttman, P.E.
Project Manager

pgafeb.wp

bc: D. Stoltzfus, City of Phoenix
K. Stemen, SHARP
C. Eschberger, SHARP Midland
File - 94106



Environmental
Engineers and Scientists

AND ASSOCIATES, INC.

982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
FAX (614) 841-4660

TO: Craig Cooper, Remedial Project Manager U.S. EPA (EPA)

FROM: Mark Whitmore, Project Manager
The Goodyear Tire & Rubber Company (Goodyear)

SUBJECT: February 1995 Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site
Goodyear, Arizona

DATE: March 10, 1995

CURRENT ACTIVITIES

Activities conducted during February 1995 are discussed below.

Metcalf and Eddy, Inc. (M&E) initiated the rebound period of Polygon 84 on January 13, 1995. Confirmation sampling was conducted on February 10, 1995.

EPA, Goodyear, Sharp and Associates, Inc. (SHARP), M&E, URS Consultants, and Arizona Department of Environmental Quality (ADEQ) met on February 7, 1995 to review activities at the site and current operations.

The pump for well E-16 arrived on site on March 2, 1995. The pump is scheduled to be installed on March 21, 1995. The schedule had to be delayed to comply with the contractors schedule and to avoid the installation during the airport air show (March 15 to March 19th).

The concentration of total chromium in well E-17 has dropped since startup in December 1993. The initial concentration was 1.24 mg/l (12/28/93). Sharp and Associates, Inc. (SHARP) conducted pilot testing of ion exchange units in May 1994 (inlet concentrations ~.800 mg/l. The test was re-run in July- August 1994 adjusting the acid dosing rates to determine whether adsorption could be increased thus improving economic feasibility of ion exchange. This alternative was not attractive even with higher acid dosing rates. Treated activated carbon was also investigated as an alternative treatment technology for chrome removal. The bench scale testing conducted in December 1994 by Lewis Environmental indicated that the activated carbon treatment was a viable economic alternative.

Upon further evaluation of the historic chromium data, SHARP noted that the concentrations have decreased 48% since the first sample. Figure 1 presents a graph of total chromium concentrations versus volume of water pumped since startup. This trend, along with the low concentrations found in surrounding monitoring wells support the conclusion of a chromium source that is limited in extent. To verify the extent of the decrease, SHARP set well E-17 at a low flow rate (10 gpm) and turned off wells E-8 and E-11. This approach allows the system to maintain compliance with the existing discharge permit limit for chromium. The concentrations during pumping stabilized between 0.600 and 0.650 mg/l. At this concentration, the well can be pumped at approximately 14 gpm without causing an exceedance of the chromium discharge concentration limit. As the chromium concentrations continue to decrease, the rate from the well will be increased. At the current rate of decrease SHARP estimates that at least 600,000 additional gallons will need to be removed from the aquifer before concentrations will decrease enough to allow a rate of 25 gpm (approximately 1 month at 14 gpm). If the trend continues further, within 3 to 6 months, the well will be able to operate at the hydraulic capture rate of 50 gpm. The current plan is to run the well at 10 gpm for several weeks, sampling weekly, and monitoring the concentrations of the discharge of the well. Flow rates will be adjusted as appropriate to maintain compliance at the plant discharge.

Tables 1 and 2 (attached) provide schedules for the B/C Groundwater Remediation and the Soil Vapor SVE Extraction Remedy. The SVE schedule presented assumes that the Polygon 84 will reach the Allowable Residual Mass (ARM) on its first rebound. The schedule does not include the "Booked" time accumulated on Polygon 84.

OUTSTANDING ISSUES/RESOLUTIONS

Goodyear is currently awaiting the approval of the Southern Subunit C O&M Manual submitted November 15, 1994.

Goodyear is awaiting the guidance manual for the 5-year site evaluation from EPA.

PLANS FOR THE NEXT MONTH

The plans for March include:

- Completing the re-work of the Northern treatment system wells I-101 and I-102 (completed March 7, 1995);
- Continuing operation of the Subunit A, Northern Subunit C treatment system, and the Southern Subunit C treatment system;
- Submitting the Comprehensive Ground Water Monitoring Plan for Subunit A now that all the pump and treat systems are in place;
- Continuing low rate operation of well E-17 and tracking the chromium concentrations;
- Installing the pump for well E-16;
- Proposing to Maricopa County Air Control Board to turn off the vapor phase carbon unit for the air tower after conducting the air modeling; and

- Conducting modeling simulations to determine the safe extraction rate for operation of COG#11 and advising the City of Goodyear.

DATA COLLECTED DURING THE PERIOD

Water level measurements were collected from Subunit A wells on February 23, 1995. These data are provided in Table 3.

Groundwater data collected during the period are as follows:

Well	Date Sampled	TCE ($\mu\text{g/l}$)
EMW-15	2/6/95	6.1
EMW-16	2/6/95	1.3
COG#11	2/10/95	<1

TCE concentrations of water from EMW-15 and EMW-16 have decreased to be near or below 5 $\mu\text{g/l}$. With concentrations in those wells dropping to near 5 $\mu\text{g/l}$, the sampling frequency has been extended to quarterly.

Additionally, with the concentration of SB#10LC dropping below the cleanup standard, the Southern Subunit C plume has been defined. Well SB#10LC is upgradient of COG#11. In the past, COG#11 was sampled monthly because the plume edge downgradient of the site was unknown. With well SB#10LC concentrations falling below detection limits and this well being located between the plume and COG#11, the sampling frequency of COG#11 will be backed off to quarterly.

SVE OPERATION

Polygon 84 started up on September 28, 1994. The system was shut down on January 13, 1995, initiating the first 14-day rebound period. Because the soil vapor concentration remained below the Operations and Maintenance (O&M) Manual lower Allowable Residual Mass (ARM) concentration, the 90-day rebound period commenced with the soil vapor sampling on February 10, 1995. Results of the sampling and VLEACH modeling will be submitted to EPA on March 17, 1995.

NORTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Northern Subunit C system continued during December. The system has been running via PLC since October 24, 1994.

The system flow rate was maintained in February at an average up time producing rate of 162 gpm (on 27 of 28 days). A total of 6.30 Million gallons (Mgal) were produced/treated during

February. The TCE inlet concentration during February was 3.2 $\mu\text{g/l}$ (2/7/95) -- resulting in an estimated mass removal during February of 0.17 lbs of TCE.

The system was shutdown on February 27, 1995 for re-development of injection wells I-101 and I-102. The wells were re-worked and tested. The specific injection tests are included on Figure 2. The injection rates of each well are in excess of 200 gpm. The system was re-started on March 7, 1995. The initial startup rate for the system was 465 gpm (with ~279 gpm to I-101 and ~189 gpm to I-102).

SOUTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Southern Subunit C system continued during December. The system has been running via PLC continuously since October 24, 1994.

A total of 19.78 million gallons (Mgal) of water were extracted during February. The plant was running 28 of a possible 28 days. The plant inlet concentration was 29 $\mu\text{g/l}$ (2/6/95) and the sample between the GAC filters was 1.2 $\mu\text{g/l}$. A second sample between the carbon canisters was collected following receipt of the results (3/3/95). The results were not available at the time of this report. Following discussions with the carbon manufacturer and using adsorption isotherms for the influent concentrations, breakthrough was not anticipated this early.

During February a total of 4.79 lbs of TCE have been removed from the groundwater bringing the total to 28.96 lbs. The production details for February are shown below.

Extraction

<u>Wells</u>	<u>Production (Mgal)</u>	<u>Average Rate(gpm)</u>
E-201	11.57	287
E-202	4.15	103
E-203	4.06	101
Totals	19.78	491

Injection

<u>Wells</u>	<u>Production(Mgal)</u>	<u>Average Rate(gpm)</u>
I-201	6.43	159
I-202	6.67	165
I-203	6.60	164
Totals	19.70	488

pgasch.wk
tjs
03/10/95

**TABLE 1
PHOENIX-GOODYEAR AEROSPACE SITE
GOODYEAR, ARIZONA
B/C AQUIFER REMEDIATION SCHEDULE**

Consent Order*	TASK DESCRIPTION	Task Ref	TIMING (days)	DUE DATE**	DELIVERY DATE
D-1	Notice to Proceed (11/27/91)	A	0	11/27/91	
	Site Visit/Job Kickoff				04/11/91
	Ground Water Monitoring Plan - upon entry of Decree		0	11/27/91	03/01/91
D-2	Initiate Preliminary Field Investigation Conceptual Design	B	30	12/27/91	04/11/91
D-2	Select Consultant (M&E)	C	30	12/27/91	03/15/91
D-16	Submit Field Investigation Work Plan	D	90	02/25/92	02/21/92
D-17	EPA Review and Approve Field Work Plan	E	D+30	03/16/92	03/16/92
	Submit Revisions on approved plan to EPA			04/06/92	04/04/92
	Field Investigation - Monitoring Well Installation				Jun-92
D-18	Conceptual Design for Ground Water Remedy (30%)	F	E+180	09/08/92	09/08/92
	EPA Disapprove Conceptual Design	F'		10/26/92	10/26/92
	Revise and Resubmit Conceptual (30%) Design	F''	F'+ 15	11/16/92	11/16/92
D-19	EPA Review and Approve Conceptual Design	G	F''+30	12/10/92	
	Submit Work Plan for northern plume				11/23/92
	EPA review and approve Pilot/well work plan				Dec-92
	Commence installation of Pilot Holes/monitor well to define Northern Plume				01/14/93
D-20	Final Draft Design and Specifications	H	G+90	03/10/93	
	Commence installation of Pilot holes for extraction/injection wells				Feb-93
D-21	EPA Review and Approve Final Draft Design	I	H+30	06/09/93	06/09/93
D-22	Submit Preliminary O&M Plan	J	I+30	07/09/93	07/09/93
D-23	EPA Review and Approve Preliminary O&M Manual	K	J+30	08/16/93	08/16/93
	Respond to EPA comments on O&M Manual			09/15/93	
D-24	Commence Construction of Northern GW Extraction Facility	L	I+90	09/07/93	07/19/93
D-25	Commence Startup of Northern GW Extraction/treatment System	M	L+270	04/15/94	02/23/94
D-26	Submit Final O&M Manual Northern System	N	M+60	04/24/94	04/22/94
D-27	EPA Review and Approve Final O&M Plan (Northern System)	O	N+30	05/22/94	09/03/94
D-25	Commence Startup of Southern GW Extraction/treatment System	M'	***	09/13/94	09/13/94
D-26	Submit Final O&M Manual Southern System	N'	M'+60	11/12/94	11/16/94
D-27	EPA Review and Approve Final O&M Plan Southern System	O'	N'+30	12/12/94	
D-28	Begin Routine Operation of Northern GW Treatment System	P	O+180	11/18/94	10/26/94
D-28	Begin Routine Operation of Southern GW Treatment System	P'	M'+180	03/12/95	10/24/94
D-29	Combine O&M Plans for A and B/C Units	Q	Unspecified		
D-30	EPA Review and Approve Unified O&M Plan	R	Q+30		
D-31	Begin Implementation of Unified Operation	S	R+0		

* Subsection of Consent Order under Section VII (Work to be Performed).

** Deadlines assume a 30 day response time for EPA.

*** Startup of Southern System is based on:

$$\{I + 90 + 270 + (L \text{ due} - L \text{ delivered}) + (M \text{ due} - M \text{ delivered})\}$$

Highlighted date indicates task completed.

Date format MMM-YY (i.e., Jun-92) indicates scheduled event but not a deliverable.

pgasch.wk
tjs
03/10/95

TABLE 2
PHOENIX-GOODYEAR AEROSPACE SITE
GOODYEAR, ARIZONA
SOIL VAPOR EXTRACTION SYSTEM

Consent Order*	TASK DESCRIPTION	Task ref	TIMING (days)	DUE DATE**	DELIVERY DATE
D-1	Notice to Proceed (11/27/91) Site Visit/Job Kickoff	A	0	11/27/91	04/11/91
D-2	Select Consultant (M&E) Initiate Preliminary SVE Work	B	30	12/27/91	03/15/91
D-6	Submit Design Memorandum for SVE	C	60	01/26/92	01/23/92
D-7	EPA Review and Approve SVE Design Memorandum EPA Disapproved SVE Design Memorandum Requiring Comments Goodyear Submit Revised Document to EPA EPA Approve revised SVE Design Memorandum Submit Revisions on approved plan to EPA	D	C+30	02/25/92	03/10/92 03/31/92 04/28/92
	Field Work/Data Collection	D'		04/30/92	04/28/92
		D''		05/19/92	05/19/92
		E			May-92
D-8	Submit Conceptual Design(90% Complete Final Design) for Syst	F	D'+135	09/10/92	09/10/92
D-9***	EPA Review and Approve 90% Design as Final Design	G	F+30	NA	
D-10***	Submit Final SVE Design EPA Disapprove SVE Final Design	H		NA	
	Revise and Resubmit Final SVE Design	H'		11/04/92	11/04/92
		H''	H'+15+	11/27/92	11/25/92
D-11***	EPA Review and Approve Final Draft SVE Design	I	H"+30	12/18/92	12/18/92
D-12	Commence Construction of SVE facilities for Polygon 79 Phase I/II field work for polygons failing VLEACH Submit Draft O&M Plan EPA comment on O&M Plan Provide Responses to EPA comments on O&M Plan	J	I+60	02/16/93	02/02/93 01/18/93
				08/04/93	08/04/93
				09/02/93	
D-13***	Commence Startup of SVE Polygon 79	K	J+210	09/14/93	09/08/93
D-14	Submit Revised SVE O&M Plan for Polygon 79 Operate SVE for Polygon 79 14 day shutdown for rebound and less than target ARM Initial Shutdown Polygon 79**** 90-day rebound sampling	L	K+60	11/07/93	11/05/93
		M			
		N	TBD	01/20/94	01/20/94
		O	N+35	02/24/94	02/24/94
		P	O+90	05/25/94	05/25/94
D-15	Submit Design for Polygon 84 EPA approve design for Polygon 84 Final verification complete for last sub-area Polygon 79****	Q	O+30	03/26/94	03/25/93
		R	Q+30	04/24/93	05/07/94
		S	TBD		
D-12	Commence Construction for Polygon 84	T	R+60	07/06/94	05/16/94
D-13	Commence Startup of SVE Polygon 84	U	T+210	12/12/94	09/28/94
D-14	EPA Approve SVE O&M Plan for Polygon 84 Operate SVE for Polygon 84 14 day shutdown for rebound and less than target ARM Initial Shutdown Polygon 84**** 90-day rebound sampling Final verification complete for last sub-area Polygon 84****	V	U+60	11/27/94	09/03/94
		W			
		X	TBD	02/10/95	02/10/95
		Y	X+35	03/17/95	
		Z	Y+90	06/15/95	
		AA	Z+35	07/20/95	
D-15	Submit Design for Polygon 96/27a/92 EPA approve design for Polygon 96/27a/92	BB	Y+30	04/16/95	
		CC	AA+30	05/16/95	
D-12	Commence Construction of Polygon 96/27a/92	EE	CC+60	07/15/95	
D-13	Commence Startup of Polygon 96	FF	EE+21	02/10/96	

* Subsection of Consent Order under Section VII (Work to be Performed).

** Deadlines assume a 30 day response time for EPA.

*** EPA and Goodyear Renegotiated these deadlines eliminating items D-10 and D-11

**** Refer to Letter 11/1/93 for calculation of deadline for design of Polygon 84

+ turnaround for the revised document is 15 working days.

Note: The schedule currently assumes that the initial shutdown sampling and 90 day rebound sampling both pass the target Allowable Residual Mass on the first attempt. This results in commencing construction in mid July. The SVE unit will not be moved to Polygon 96/27A/92 until Polygon 84 is completed.

tjs

03/10/95

TABLE 3
PHOENIX-GOODYEAR AIRPORT SITE
WATER LEVELS FOR SUBUNIT A WELLS
COMPARISON OF JANUARY AND FEBRUARY

WELL NAME	MEAS. POINT ELEVATION	DEPTH TO WATER FEBRUARY	DEPTH TO WATER JANUARY	WATER TABLE ELEVATIONS 2/23/96	WATER TABLE ELEVATIONS 1/31/96	DELTA 2/96-1/96
15GMW-04	965.00	53.80	54.50	911.20	910.50	0.70
16EMW-10	957.85	51.70	52.10	906.15	905.75	0.40
16EMW-12	957.80	53.50	54.10	904.30	903.70	0.60
16EMW-15	958.14	53.50	53.90	904.64	904.24	0.40
16EMW-16	962.40	56.10	56.50	906.30	905.90	0.40
16EMW-17	970.10	62.70	62.90	907.40	907.20	0.20
16EMW-3	962.97	56.40	56.80	906.57	906.17	0.40
16EMW-5	966.39	60.70	61.20	905.69	905.19	0.50
16EMW-7	960.04	54.50	55.00	905.54	905.04	0.50
16EMW-8	961.92	54.10	54.50	907.82	907.42	0.40
16EP-2	955.42	51.00	51.50	904.42	903.92	0.50
16EP-4	952.63	46.60	47.20	906.03	905.43	0.60
16GMW-3	962.20	52.40	52.90	909.80	909.30	0.50
16GMW-6	962.97	54.90	55.30	908.07	907.67	0.40
16GMW-7	962.21	52.60	53.10	909.61	909.11	0.50
16GMW-8	964.26	55.90	56.30	908.36	907.96	0.40
16GP-1	960.07	51.70	52.20	908.37	907.87	0.50
21EMW-13	950.71	47.40	48.00	903.31	902.71	0.60
EMW-23A	934.83	32.60	32.90	902.23	901.93	0.30
EMW-24A	942.82	40.70	41.00	902.12	901.82	0.30
EMW-25A	935.25	36.10	35.50	899.15	899.75	(0.60)
EMW-26A	950.88	48.20	48.60	902.68	902.28	0.40
EMW-29A	971.80	63.00	63.40	908.80	908.40	0.40
EO-1	944.35	43.70	43.80	900.65	900.55	0.10
EO-2	945.34	44.20	44.50	901.14	900.84	0.30
EO-3	944.89	45.20	45.50	899.69	899.39	0.30
EO-4	946.73	44.40	47.00	902.33	899.73	2.60
EO-5	950.09	47.80	48.40	902.29	901.69	0.60
EO-7	957.87	53.60	54.00	904.27	903.87	0.40
EO-8	959.12	53.30	53.70	905.82	905.42	0.40
EO-10	961.22	55.60	56.00	905.62	905.22	0.40
EO-12	956.75	53.20	53.50	903.55	903.25	0.30
E-3	941.54	39.00	38.80	902.54	902.74	(0.20)
IO-1	934.35	32.30	31.50	902.05	902.85	(0.80)
IO-2	930.51	27.60	20.90	902.91	909.61	(6.70)
IO-4	938.12	38.60	34.50	899.52	903.62	(4.10)
IO-5	934.82	33.40	25.70	901.42	909.12	(7.70)
IO-6	940.59	42.40	37.90	898.19	902.69	(4.50)
IO-7	936.45	38.30	21.40	898.15	915.05	(16.90)
IO-8	943.88	45.40	38.60	898.48	905.28	(6.80)
IO-9	940.94	39.10	25.50	901.84	915.44	(13.60)
IO-10	940.96	40.00	37.10	900.96	903.86	(2.90)
IO-12	939.75	36.90	37.30	902.85	902.45	0.40
IO-13	948.93	45.70	45.90	903.23	903.03	0.20
IO-14	932.12	29.70	30.00	902.42	902.12	0.30
IO-16	932.97	29.20	29.10	903.77	903.87	(0.10)
IO-17	943.79	40.10	39.90	903.69	903.89	(0.20)
IO-18	954.54	50.90	51.00	903.64	903.54	0.10
NEW-1	937.81	36.30	36.20	901.51	901.61	(0.10)
NEW-3	953.13	50.50	51.20	902.63	901.93	0.70
NEW-4	957.19	53.80	54.10	903.39	903.09	0.30
NEW-8	950.77	48.70	48.80	902.07	901.97	0.10
NEW-9	955.97	51.70	52.10	904.27	903.87	0.40
Average change from last month=						(0.89)

* Trends are not matched in January, therefore producing an erroneous result.

Figure 1. Goodyear - PGA
E-17C Chrome vs. Gallons Pumped

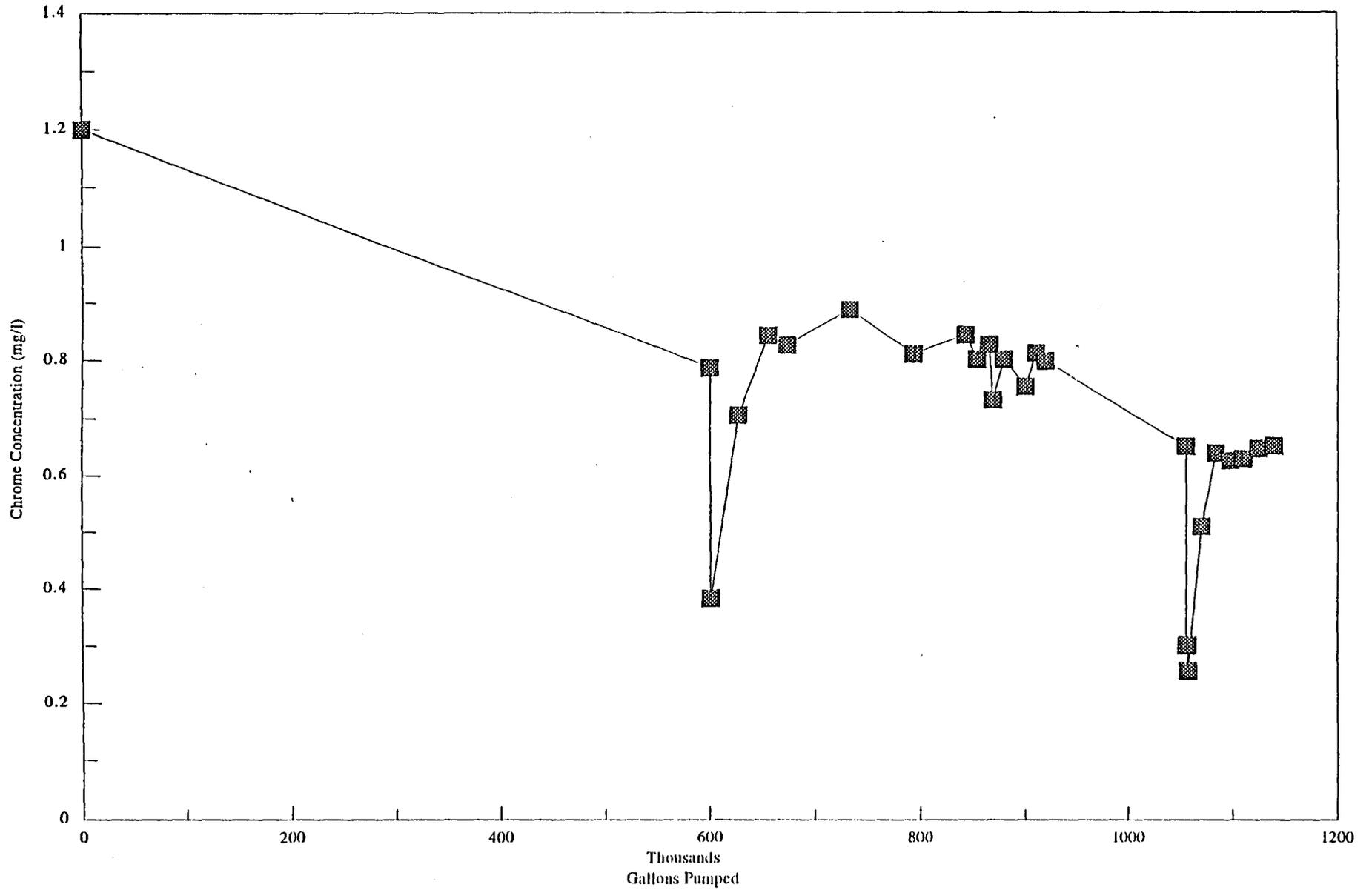
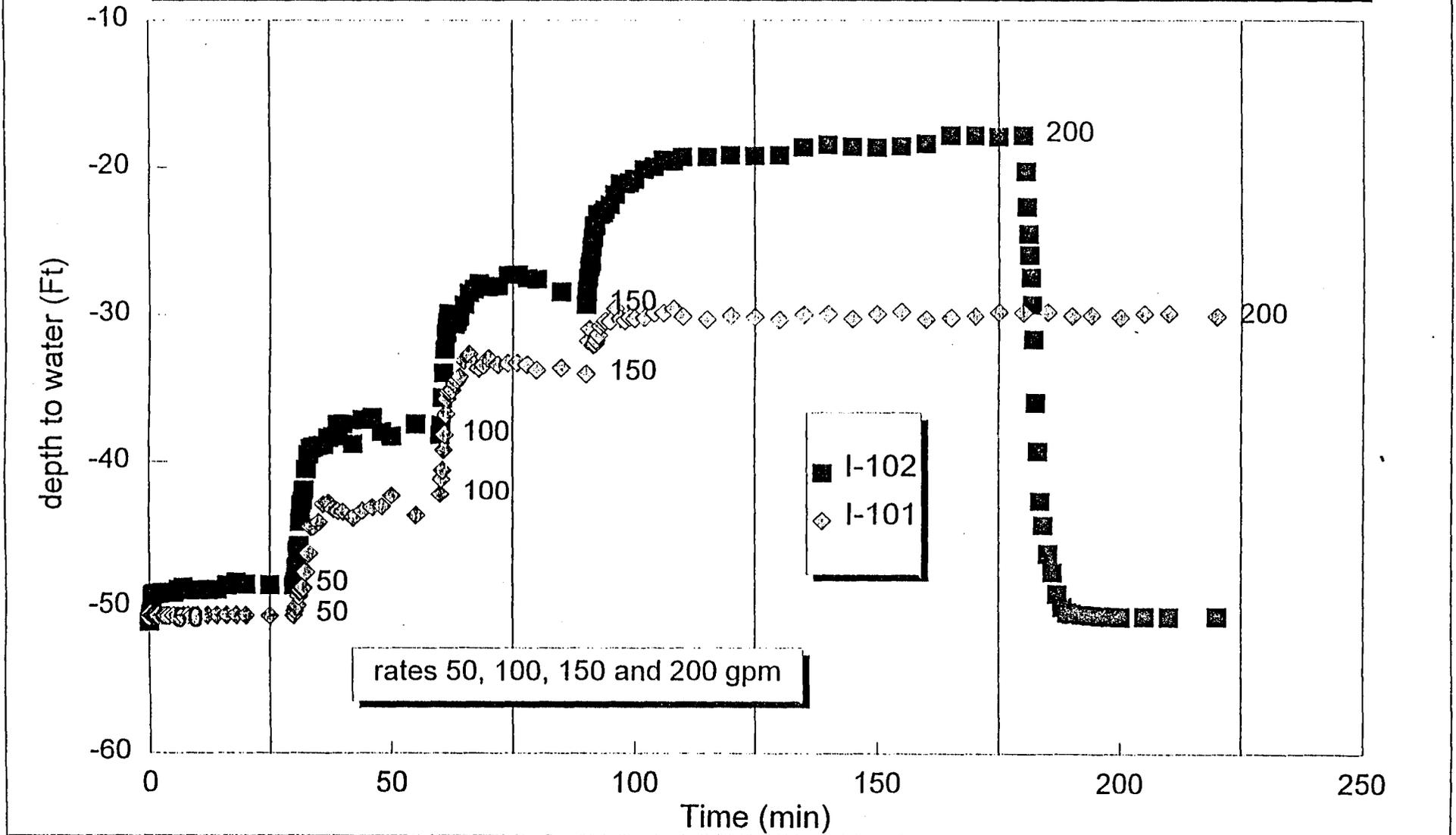


Figure 2. Specific Injection Test I-101 and I-102

3/6/95 and 3/7/95



PHASE I ENVIRONMENTAL ASSESSMENT INTERVIEW QUESTIONS

RECEIVED

KEN SHEELY RANCH
DISCOVERY WEST RANCH
2209 N. 99th Avenue
Phoenix, AZ 85037

MAR 14 1995

WALLEN PERMITS
ASSOCIATES, INC.

CONTACT NAME, ADDRESS, AND PHONE NUMBER:

Tim Smith 2209 N. 99th Ave Phx/Az 85037
936-9545

CONTACTS RELATIONSHIP TO THE SUBJECT PROPERTY:

Lessee

INFORMATION CONCERNING OTHER POSSIBLE INTERVIEW SUBJECTS:

1. Time Frame that contact has information about the subject property?

3 years

2. Current and former use of the subject property?

Family

3. Is the subject property on city sewer or a septic system? Have there ever historically been any septic systems located on the subject property?

no

4. Who provides water to the subject property? Are there any wells located on the subject property?

~~Roosevelt Irrigation Dist.~~ Wells on adjacent property

5. Who provides electricity to the subject property? Are there any transformers or florescent lighting ballasts on the subject property that may contain PCBs? Have any of the transformers or ballasts exploded or leaked?

AAS no

6. Who provides sanitation to the subject property? Is there now or has there historically been any illicit disposal activities on the subject property or in the immediate area surrounding the subject property?

no

7. Who provides gas to the subject property?

NA

8. What is the total size of the subject property? Can contact physically or verbally define the boundaries of the subject property?

no

9. Can contact describe the number and type of structures present on the subject property? What are the current and historical uses of the structures present on the property?

NA

10. Was the property ever utilized as agricultural land? What types of crops were grown? Were pesticides or herbicides utilized on the subject property to any degree? How much and what kind?

yes Cotton & Grain yes

11. Are there currently or have there historically been underground or aboveground storage tanks on the subject property? How many, Fuel type, Capacity, Fuel use, installation date, tank construction, piping type, tank tightness testing?

no

12. Has there been any significant storage, usage or disposal of chemicals or other hazardous substances on the subject property? Have there been any spills, leaks or other hazardous materials incidents on the subject property or in the immediate area surrounding the subject property?

no

13. What types of properties or facilities have been located in the immediate area surrounding the subject property?

Farm

14. What is the general drainage pattern on the subject property? Is there any improved drainage installed? Are there any drywells or sumps located on the subject property?

Drainage is from west to east

15. Does the contact have any maps or drawings of the subject property? Does the contact have any permits or waivers for activities that may take place on the subject property?

no

16. Does contact know of any unusual features about the property, ie. unidentified pipes, depressions, stains etc?

no

17. Is the contact aware of any asbestos containing materials or prior asbestos abatement activities that may have taken place on the subject property?

NA

18. Has there been any Radon testing accomplished on the subject property? Have Radon mitigation units ever been installed on the subject property?

no

19. Is the contact aware of any landfills or areas of heavy dumping close to the subject property?

no

20. Have there been any liens placed against the property for environmental or health and safety concerns?

NA

PHASE I ENVIRONMENTAL ASSESSMENT INTERVIEW QUESTIONS

CONTACT NAME, ADDRESS, AND PHONE NUMBER:

Shane Spencer
505 E. Plaza Circle, Litchfield Park, AZ 935-6330

CONTACTS RELATIONSHIP TO THE SUBJECT PROPERTY:

Environmental Officer

INFORMATION CONCERNING OTHER POSSIBLE INTERVIEW SUBJECTS:

1. Time Frame that contact has information about the subject property?

10 Years

2. Current and former use of the subject property?

Aluminum Recycling

3. Is the subject property on city sewer or a septic system? Have there ever historically been any septic systems located on the subject property?

City Sewer
There had been septic at one time.

4. Who provides water to the subject property? Are there any wells located on the subject property?

City of Goodyear and industrial type II wells.
onsite production wells

5. Who provides electricity to the subject property? Are there any transformers or florescent lighting ballasts on the subject property that may contain PCBs? Have any of the transformers or ballasts exploded or leaked?

APS
There are ballasts.
None have leaked.

6. Who provides sanitation to the subject property? Is there now or has there historically been any illicit disposal activities on the subject property or in the immediate area surrounding the subject property?

BFI (Browning Ferris)

No

7. Who provides gas to the subject property?

S/W Gas

8. What is the total size of the subject property? Can contact physically or verbally define the boundaries of the subject property?

40 acres

Yes

9. Can contact describe the number and type of structures present on the subject property? What are the current and historical uses of the structures present on the property?

Yes Offices

Shops

10. Was the property ever utilized as agricultural land? What types of crops were grown? Were pesticides or herbicides utilized on the subject property to any degree? How much and what kind?

No

11. Are there currently or have there historically been underground or aboveground storage tanks on the subject property? How many, Fuel type, Capacity, Fuel use, installation date, tank construction, piping type, tank tightness testing?

2 - 5,000 gallon underground tanks removed 12/93 closure[#]

1 - 10,000 gallon double wall above ground tank installed 1/94

Fuel - diesel for mobile equipment.

12. Has there been any significant storage, usage or disposal of chemicals or other hazardous substances on the subject property? Have there been any spills, leaks or other hazardous materials incidents on the subject property or in the immediate area surrounding the subject property?

No

Goodyear Airport - Superfund cleanup site. *no FRP*

13. What types of properties or facilities have been located in the immediate area surrounding the subject property?

Agriculture, industry, and residential

14. What is the general drainage pattern on the subject property? Is there any improved drainage installed? Are there any drywells or sumps located on the subject property?

Drainage designed for storm water retention ponds.

15. Does the contact have any maps or drawings of the subject property? Does the contact have any permits or waivers for activities that may take place on the subject property?

Yes

Yes

16. Does contact know of any unusual features about the property, ie. unidentified pipes, depressions, stains etc?

No

17. Is the contact aware of any asbestos containing materials or prior asbestos abatement activities that may have taken place on the subject property?

No

18. Has there been any Radon testing accomplished on the subject property? Have Radon mitigation units ever been installed on the subject property?

No

19. Is the contact aware of any landfills or areas of heavy dumping close to the subject property?

No

20. Have there been any liens placed against the property for environmental or health and safety concerns?

No



IMSAMET
505 EAST PLAZA CIRCLE, SUITE D
LITCHFIELD PARK, ARIZONA 85340
TEL. (602) 935-6330
FAX (602) 935-6406

FAX TRANSMITTAL SHEET

NAME: Kim Bergsten DATE: 3/15/94
COMPANY: Growth Environmental
FAX NO.: 248-7722
FROM: Shane Spencer

TOTAL NUMBER OF PAGES INCLUDING TRANSMITTAL SHEET: 2

IF YOU DO NOT RECEIVE ALL OF THE PAGES, PLEASE CONTACT US AT:

(602) 935-6330

() FOR YOUR APPROVAL

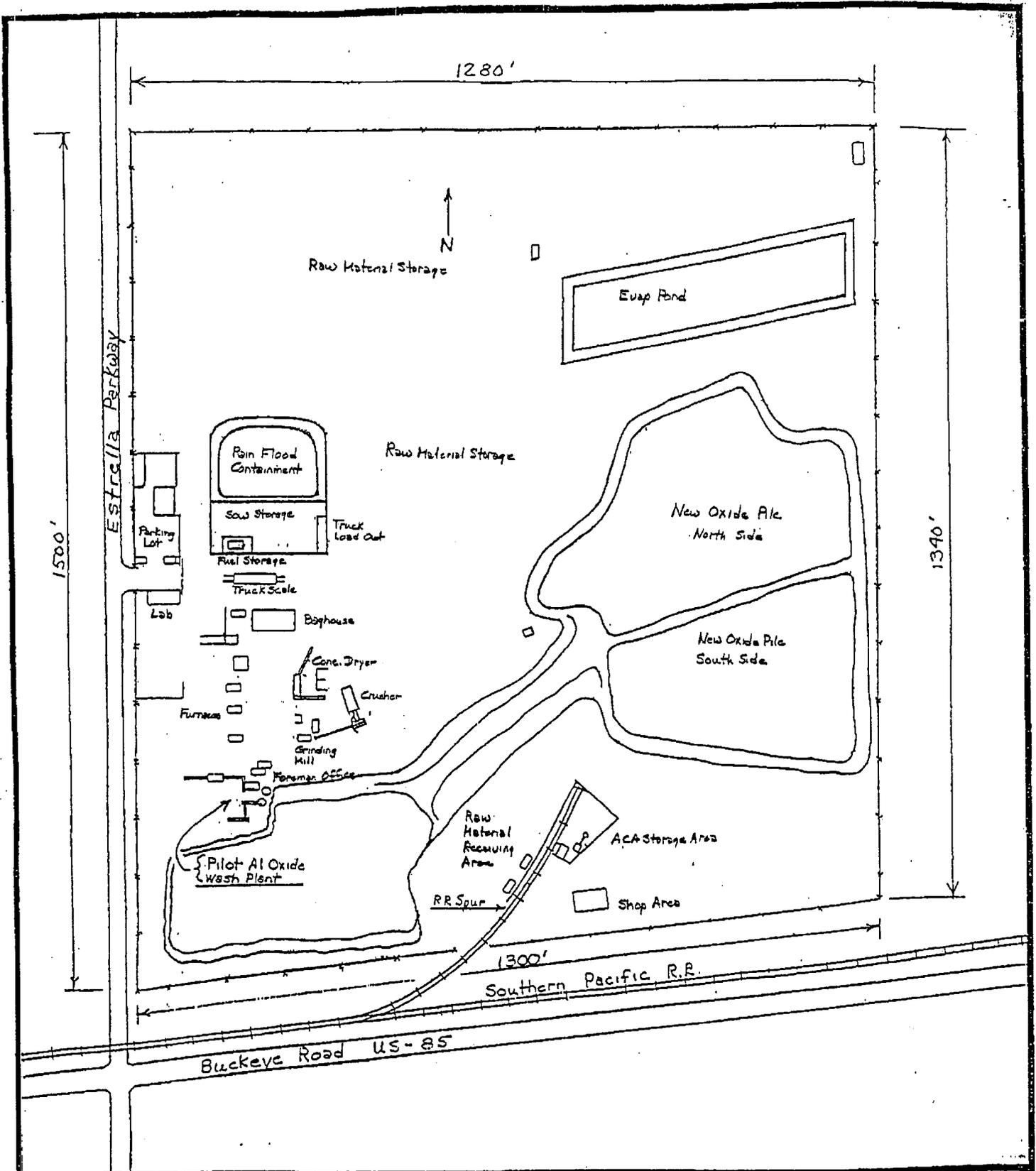
AS YOU REQUESTED

() PLEASE CALL

() AS WE DISCUSSED

() FOR YOUR INFORMATION

ADDITIONAL COMMENTS:



 <p>IMSAMET, INC. IMS ALUMINUM SERVICES DIVISION 505 EAST PLAZA CIRCLE, SUITE D • LITCHFIELD PARK, AZ 85340</p>	<p>IMSALCO - Plant Layout</p>
<p>DRAWN BY: H.C.J.</p>	<p>DATE: 2/8/94 SCALE: Copier Reduced A-G-010-01-07</p>

Telephone Interview
April 20, 21, 1995

PHASE I ENVIRONMENTAL ASSESSMENT INTERVIEW QUESTIONS

CONTACT NAME, ADDRESS, AND PHONE NUMBER:

RONALD WOODS, 4808 North Guenther Drive, East Litchfield Park
Phone # (602) 935-9390

CONTACTS RELATIONSHIP TO THE SUBJECT PROPERTY:

OWNER

INFORMATION CONCERNING OTHER POSSIBLE INTERVIEW SUBJECTS:

NONE

1. Time Frame that contact has information about the subject property?

SINCE 1935

2. Current and former use of the subject property?

Currently used as Agricultural Land with a Farm Compound at the Northwest corner. Mr. Woods said the property was dirt prior to becoming Agricultural Land.

3. Is the subject property on city sewer or a septic system? Have there ever historically been any septic systems located on the subject property?

Mr. Wood stated that both houses in the farm compound are on septic and that the pipes we identified as 5 possible wells near the small house were cesspools.

4. Who provides water to the subject property? Are there any wells located on the subject property?

Domestic water wells - Mr. Woods stated that there were historical 5 wells on the property. He said as wells went dry they would cover them up and dig another.

5. Who provides electricity to the subject property? Are there any transformers or florescent lighting ballasts on the subject property that may contain PCBs? Have any of the transformers or ballasts exploded or leaked?

APS - Mr. woods stated that the wells have transformers associated with them. He said he was unaware of any spill, leaks or explosions of any transformers on the site.

6. Who provides sanitation to the subject property? Is there now or has there historically been any illicit disposal activities on the subject property or in the immediate area surrounding the subject property?

Paper trash is Burned - The remainder of garbage is taken to Dump. Mr. Woods stated that some indiscriminate dumping has been observed along Lower Buckeye Road.

7. Who provides gas to the subject property?

Mr. Woods stated that BUTANE GAS IS USED ON THE SITE.

8. What is the total size of the subject property? Can contact physically or verbally define the boundaries of the subject property?

Boundaries defined during the site visit.

9. Can contact describe the number and type of structures present on the subject property? What are the current and historical uses of the structures present on the property?

Mr. Woods concurred with our site observations concerning structures on the site.

10. Was the property ever utilized as agricultural land? What types of crops were grown? Were pesticides or herbicides utilized on the subject property to any degree? How much and what kind?

Yes - Cotton, Alfalfa, grain. - Pesticides used historically include DDT, Toxaplene and Treplan 5

11. Are there currently or have there historically been underground or aboveground storage tanks on the subject property? How many, Fuel type, Capacity, Fuel use, installation date, tank construction, piping type, tank tightness testing?

Yes currently there are 10 AST's on site. Diesel, Gasoline & Water. 2 AST's have been removed, one from south of the shed by the big house and one east of the large Quast.

12. Has there been any significant storage, usage or disposal of chemicals or other hazardous substances on the subject property? Have there been any spills, leaks or other hazardous materials incidents on the subject property or in the immediate area surrounding the subject property?

No, not to the best of Mr. Woods knowledge.

13. What types of properties or facilities have been located in the immediate area surrounding the subject property?

IMSALCO, Goodyear Airport, Ag land.

Gasoline was stored in the one by the large house and Mr. Woods said that it had appeared that it had leaked upon removal but no further action was taken. It was removed 10-15 years ago. The other tank (see notes)

14. What is the general drainage pattern on the subject property? Is there any improved drainage installed? Are there any drywells or sumps located on the subject property?

To The South - NO improved DRAINAGE

15. Does the contact have any maps or drawings of the subject property? Does the contact have any permits or waivers for activities that may take place on the subject property?

NO - To The Best of MR. Woods Knowledge

16. Does contact know of any unusual features about the property, ie. unidentified pipes, depressions, stains etc?

NO - To The Best of MR. Woods Knowledge

17. Is the contact aware of any asbestos containing materials or prior asbestos abatement activities that may have taken place on the subject property?

NO - To The Best of MR. Woods Knowledge

18. Has there been any Radon testing accomplished on the subject property? Have Radon mitigation units ever been installed on the subject property?

NO - To The Best of MR. Woods Knowledge

19. Is the contact aware of any landfills or areas of heavy dumping close to the subject property?

NO - To The Best of MR. Woods Knowledge

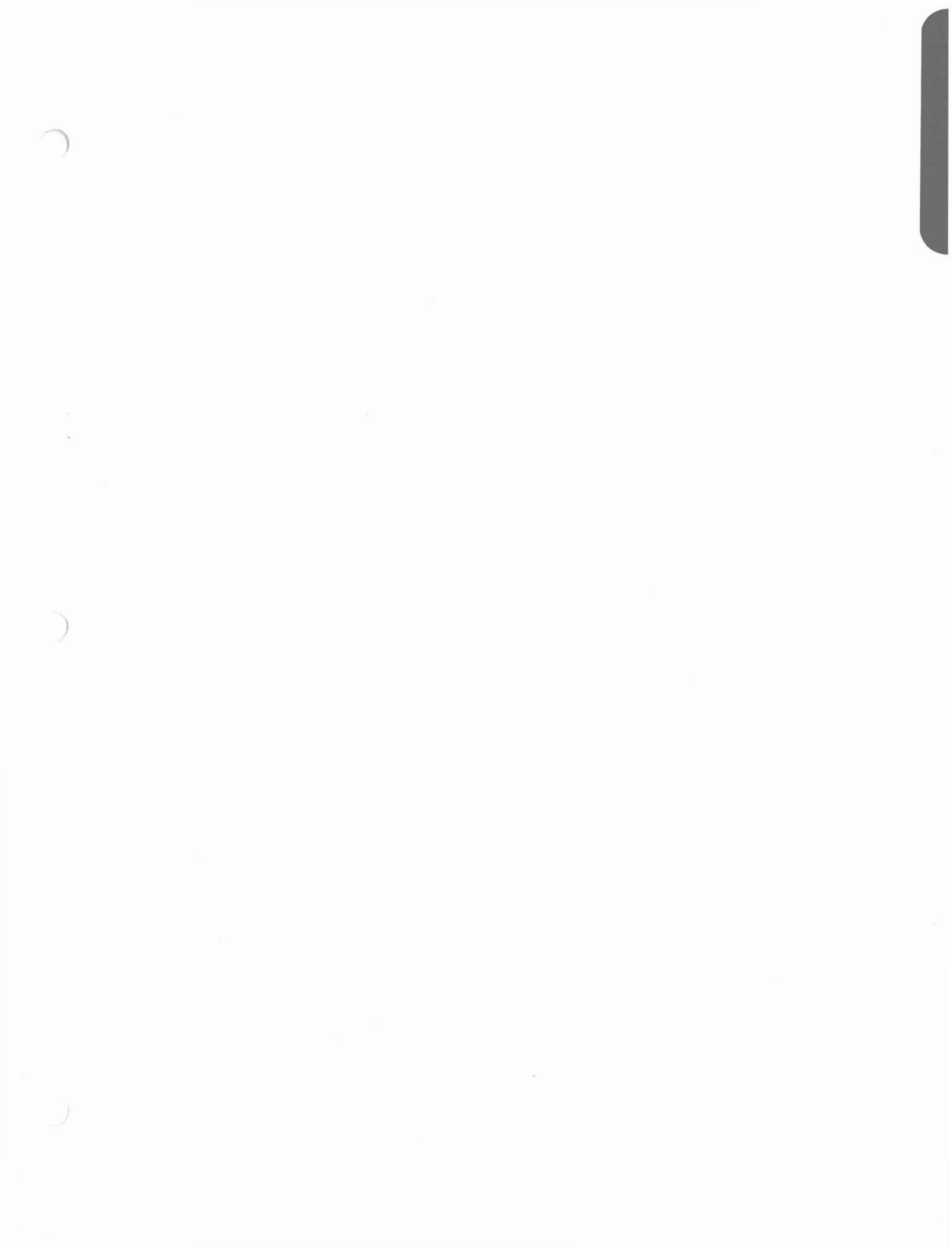
20. Have there been any liens placed against the property for environmental or health and safety concerns?

NO - To The Best of MR. Woods Knowledge

NOTES OR SKETCHES

* UST'S CONT. - CONTAINED ^{Diesel FUEL CAR} ~~Gasoline~~ AND MR. WOODS STATED THAT
IT DID NOT APPEAR THAT IT HAD LEAKED UPON
REMOVAL. (DUG UP APPX. 6 YEARS AGO)

PROPERTY IS CURRENTLY ALL LEASED. 14 ACRES IS LEASED FROM
THE CITY OF PHOENIX GARDEN AIRPORT.



APPENDIX E
FREEDOM OF INFORMATION ACT REQUESTS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

RECEIVED

APR 27 1995

WATER RESOURCES
ASSOCIATES INC.

APR 21 1995

Kim Chambers Bergsten
Growth Environmental Services, Inc.
4041 N. Central Avenue, Suite 1050
Phoenix, AZ 85012

Re: Freedom of Information Act Request RIN-9-0662-95

Dear Ms. Bergsten:

In response to your Freedom of Information Act (FOIA) request of March 20, 1995, please find enclosed information that we believe is responsive to your request.

Please refer to the enclosed list of documents for:

Reclaimed Metals Corporation
1393 S. Reems Road
Goodyear, AZ
AZD068399039

If you have any questions, please contact Ann Fisher of this office at (415) 744-2342.

Sincerely,

A handwritten signature in cursive script that reads "Betty Curran for".

Donald C. White, Chief
Field Operations Branch

Enclosures

MAR 31 1995

Phoenix District
4041 N. Central Avenue, Suite 1050
Phoenix, AZ 85012-3393
602-248-8808
602-248-7722 Fax

March 20, 1995

RIN-9-0662-95

Mr. Thomas A. Mix, Chief
Site Evaluation Section
USEPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: FREEDOM OF INFORMATION ACT (FOIA) REQUEST

0124

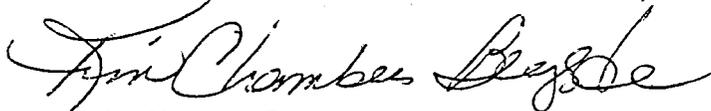
Dear Mr. Mix:

We would like to request copies of the discovery document and preliminary assessment conducted for Reclaimed Metals, EPA ID# AZD068399039. If any additional or more recent information pertaining to this facility is available, a copy of this information would be greatly appreciated.

If you have any questions concerning our request please give me a call at (602) 248-8808.

Respectfully submitted,

GROWTH ENVIRONMENTAL SERVICES, INC.



Kim Chambers Bergsten
Environmental Scientist

cc: GES File AR390-1901

BILLING CATEGORY

Commercial

04/13/95

List of Documents in Response to FOIA request: RIN-9-0662-95

Site #0124
Reclaimed Metals Corporation
EPAid# AZD 068 399 039

1. Recommendations for Further Action

07/28/87



ecology and environment, inc.

160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811

International Specialists in the Environment

(0124)

RECOMMENDATIONS FOR FURTHER ACTION

DATE: April 30, 1987

PREPARED BY: Linda G. Davis, Ecology & Environment, Inc.

SITE: Reclaimed Metals Corporation
1393 S. Reems Road
Goodyear, Arizona
Maricopa County

TDD #: F9-8612-23

EPA ID #: AZD068399039

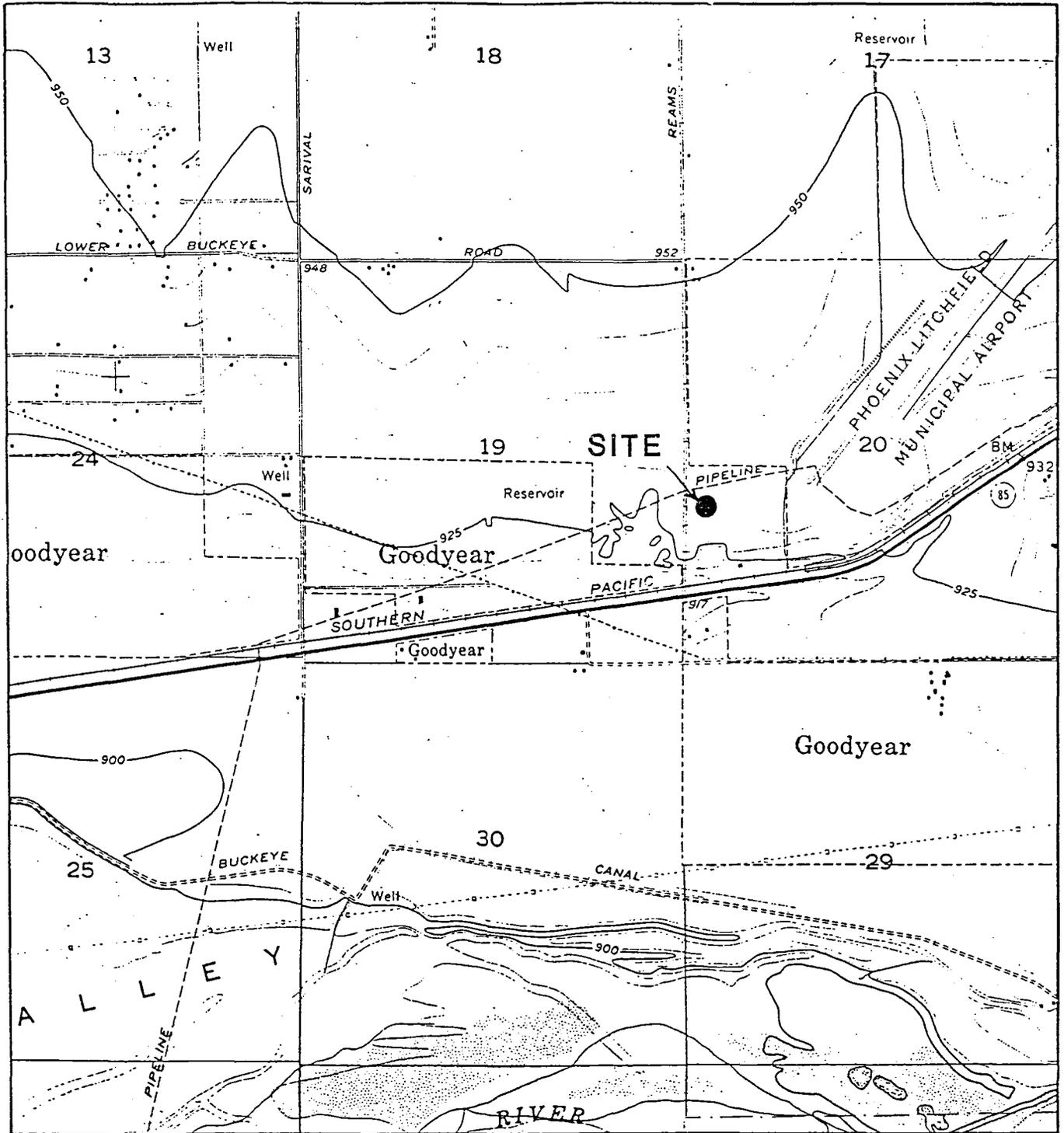
INTRODUCTION

Reclaimed Metals Corporation (RMC) is located in the Phoenix Litchfield Airport (PLA) area in Goodyear and Avondale, Arizona. PLA (AZD 980695902), a National Priorities List (NPL) site, has area-wide groundwater contamination of trichloroethylene (TCE). Because of the extent of this contamination, the Environmental Protection Agency (EPA) initiated a Remedial Investigation (RI) in 1983, one goal of which is to verify the other potential sources of TCE contamination. RMC was identified as one of the facilities to be studied based on its close proximity to contaminated groundwater wells. As part of the RI process the EPA has tasked Ecology & Environment, Inc.'s (E&E's) Field Investigation Team (FIT) to perform a Preliminary Assessment of RMC.

1. Initial FIT conclusions and recommendations for further action:

a) Site Description:

RMC has leased the property at 1393 S. Reems Road, Goodyear, Arizona since 1973. The owner of the property, International Utilities, Inc. (1818 Market Street, Philadelphia, PA), purchased the site in 1973 from a private party (1). RMC reclaims aluminum dross which consists of aluminum residues left in aluminum reduction furnaces after the metal is poured out. The aluminum dross to be reclaimed is obtained from outside sources. This reclamation is performed by breaking up the dross by either a crane or jaw crusher, washing out the non-metallics in a ball mill and then remelting the metal into ingots



SOURCE: USGS MAP

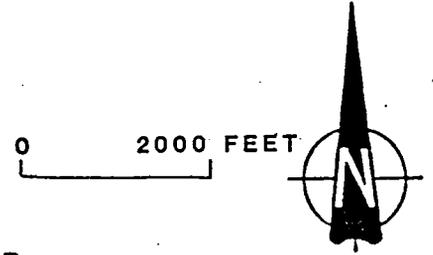


FIGURE 1 SITE LOCATION MAP
RECLAIMED METALS
 1393 S. REAMS ROAD
 GOODYEAR, AZ

or molds. The refined metal is then sold to customers for reuse. The aluminum oxide residues that remain after the reclamation process are stored on site and sold intermittently to customers for use as an ingredient in cement; as a thermite topping to the steel mills; as a sandblasting agent and as a chemical source of aluminum oxide. The major metallic components of this residue are 30% Aluminum, 10% Silicon, 7% Manganese and 7% Magnesium. The complete Metals composition is given in Appendix A. According to RMC personnel there is "no use of solvents other than (sic) minute quantities possibly used in the care of tractors and other motorized equipment" (1).

From the early 1960s to 1973 the property and facility were used by several different owners for business purposes similar to metal reclamation. From available file information, it appears that prior to that period the property was used to melt down old World War II planes (1). The size of the facility is not currently available.

Apparent Problem:

RMC was referred to the FIT staff after being identified by EPA as a Potentially Responsible Party (PRP) for the Phoenix- Litchfield Airport (PLA) area groundwater contamination (2). There is no evidence to indicate any of the processes at RMC use or produce the chemicals that have been detected in the PLA groundwater, or other potentially hazardous materials, other than the aluminum oxide waste. This aluminum oxide is sold as described in site description.

Regulatory History:

The Maricopa County Health Department, Air Quality Division performs routine particulate source inspections at RMC. Although RMC generates emissions consisting primarily of aluminum oxide they have been within the county's particulate emissions criteria on inspections within the last four years. There are no violations for RMC on file at Maricopa County Health (3).

The waste aluminum oxide produced at RMC is not a Resource Conservation and Recovery Act (RCRA) classified waste (4). RMC is not required to have a RCRA permit (5).

Aluminum oxide is classified as a "Nuisance Particulate" by the American Conference of Governmental Industrial Hygienists (ACGIH). This classification means that aluminum oxide dusts produce "little adverse effect on lungs and do not produce significant organic disease or toxic effect when exposures are kept under reasonable control" (6).

b) HRS Factors:

Observed Release:

As stated above the RMC facility generates particulate emissions primarily of aluminum oxide. The facility's emissions have been within the Maricopa County Health Department, Air Quality Division limits.

Direct Contact/Fire and Explosion:

There is no available evidence to indicate the threat of an on-site direct contact or fire/explosion incident.

Waste Type/Quantity:

As stated in the Apparent Problem section, waste aluminum oxide is generated on-site but is not a RCRA regulated waste. The quantity of waste aluminum oxide produced is unknown. No other wastes are produced (1).

Groundwater:

Groundwater in the Goodyear area is found throughout the alluvial deposits which extend to a vertical depth of 1500 feet below ground surface. This alluvium is divided by aquitard strata into the Upper Alluvial Unit, the Middle Fine-Grained Unit and the Lower Conglomerate Unit. The upper unit is approximately 325 feet thick, with the top of the water table approximately 50 feet beneath ground surface. Groundwater recharge is derived from surfaces such as stream channels and canals, as well as percolation from irrigation and treated sewage effluent. Due to the fact that pumping is greater than recharge the water table level, though now stable, has fallen somewhat since pumping began in the 1920's. The general direction of groundwater flow in the area is from the southeast to the northwest (7). Groundwater supplies all of the drinking water to Goodyear's population and is the only industrial water supply (2). There are two wells in the northeast corner of the property. One of them is sampled regularly as part of the PLA water quality sampling effort.

Net annual precipitation is -16.79 inches (10).

Surface Water:

Surface water flow in the area is generally intermittent. The ground slopes south at about a 1% grade toward the Gila River, which is about 1 1/2 miles from the site. The Gila River is used for irrigation and recreation (11).

One year, 24-hour rainfall is 1.6 inches for this area (8).

c) Conclusions and Recommendations:

RMC was referred to FIT as a PRP with regard to the PLA area-wide TCE contamination. Reclaimed Metals does not use or generate any hazardous wastes. The waste aluminum oxide generated on-site is not a RCRA regulated waste and is considered only a "Nuisance Particulate" by ACGIH. RMC has been within Maricopa County Health Department Air Quality Division criteria on particulate emissions for the last four years. Therefore, FIT recommends no further action.

2. FIT Review/Concurrence:

Chris Lickers, 4/30/87

3. EPA Recommendation For Further Action:

No further action is required at this facility since no hazardous material have been disposed of on site. 7/21/87

4. Response Termination: No further Action ; Active

Pending .

Justification:

There does not appear to be an uncontrolled hazardous waste site here. No further EPA action required under CERCLA.

Paul J. Conroye

7.28.87

References

- 1) Reclaimed Metals Corporation response to EPA 3007/104 letter, 12/26/84.
- 2) Phoenix-Litchfield Airport Area Remedial Investigation, volume I, June 1984
- 3) Chris Andrews, Maricopa County Health, Air Quality, personal communication, 4/6/87.
- 4) Dan Marsin, AZDOHS, personal communication, 4/2/87.
- 5) Al Rosler, AZDOHS, personal communication, 4/6/87.
- 6) Threshold Limit Values for Chemical Substances in the Work Environment Adopted by ACGIH, 1986.
- 7) Evaluation of the Adequacy and Quality of Water for the Town of Goodyear, Arizona, Water Development Corporation, 1980.
- 8) Rainfall Frequency Atlas of the United States, Weather Bureau, 1961.
- 9) Goodyear Chamber of Commerce, personal communication, 4/24/87.
- 10) Climatic Atlas of the United States, U.S. Department of Commerce, June 1986.
- 11) George Shade, Department of Water Resources, personal communication, 4/30/87.

P.A./S.I. CONTACT LOG

Facility Name: Reclaimed Metals
 Facility ID: AZD068399039

Name	Affiliation	Phone #	Date	Information
Phil Jones	City of Phoenix Fire Department	(602) 262-6297	1/20/87	No file information.
Mark Gaillard	City of Goodyear Fire Department	(602) 932-3910	1/20/87	Called to find out about file information. Has some, will visit on 1/21/87.
-----	Department of Water Resources		1/21/87	Has no information on hazardous materials. That is handled at AZDOHS.
Dan Marsin	AZDOHS	(602) 257-2221	4/2/87	Alumina is not a RCRA listed hazardous waste. He'll check to see if anyone has more information.
Chris Andrews	Maricopa County Health, Air Quality	(602) 258-6381	4/6/87	See contact report.
Al Rosler	AZDOHS, RCRA permits	(602) 257-2249	4/6/87	No RCRA permit for this site.
-----	Goodyear Chamber of Commerce	(602) 932-2260	4/24/87	Population of Goodyear is about 7,500.
Bill Williams	AZDOHS, CERCLA Division	(602) 257-2334	1/21/87	No file information on this site.
FINDS File	EPA		4/2/87	CERCLIS file found. Also some CDS file information.
George Shade	Department of Water Resources	(602) 255-1586	4/30/87	Gila River in The Goodyear area is used for irrigation and recreation. It is not used for drinking water.

CONTACT REPORT

AGENCY: Maricopa County Health, Air Quality

ADDRESS:

PERSON

CONTACTED: Chris Andrews

PHONE: (602) 258-6381

FROM: Linda Davis

TO: File

DATE: 4/6/87

SUBJECT: Reclaimed Metals

Chris Andrews said that from his available information it appears there had been some complaints against RMC emissions in the past but things seem to have improved. The most recent inspections were as follows:

12/5/86 passed inspection;

11/27/85 emissions: 20% opacity, passed inspection;

3/8/85 no violations, passed inspection;

5/11/84 10% visible emissions, passed inspection; and

5/26/83 15% visible emissions, 5% fugitive emissions, passed inspection.

Some problems existed at Reclaimed Metals during The inspections but not enough to cite them. No violations in file.

Reclaimed Metals recently submitted a permit application for a new rotary dross remelt furnace. They have three furnaces now, all with Venturi scrubbers attached for emission control. The new furnace will have a pre-coated bag house. There used to also be a zinc furnace in operation there, but no more. Reclaimed Metals was bought by a company called Insalco recently.



GROWTH
Growth Environmental Services, Inc.

Phoenix District
4041 N. Central Avenue, Suite 1050
Phoenix, AZ 85012-3393
602-248-8808
602-248-7722 Fax

March 20, 1995

Ms. B. J. Atwood
Maricopa County
Division of Air Pollution Control
2406 South 24th Street
Suite E-214
Phoenix, AZ 85034

SUBJECT: FREEDOM OF INFORMATION ACT (FOIA) REQUEST FOR IMSALCO, 3829 SOUTH ESTRELLA PARKWAY (AZD068399039) AND/OR RECLAIMED METALS, 1393 SOUTH REEMS ROAD (AZD0000237370), GOODYEAR, ARIZONA

Dear Ms. Atwood:

Growth Environmental Services, Inc. (Growth) is currently conducting a Phase I Environmental Site Assessment at the property described above. Pursuant to due diligence requirements, and under authority of the Freedom of Information Act (FOIA), we request notice of such specific information as you may have regarding the above referenced property. We request notification whether:

- a) there has been any notice of violation, cease and desist order, memorandum of understanding, injunction, or the like issued under Maricopa County Air Pollution's authority with respect to the property or facilities thereon;
- b) the property is currently under investigation by Maricopa County Division of Air Pollution Control (MCDAPC)
- c) there have been any reported violations or registered complaints to MCDAPC, or that the property or facilities thereon are not in compliance with compliance with environmental laws, regulations, or standards; or,
- d) there is any other pertinent information relating to the site or neighboring properties in your files.

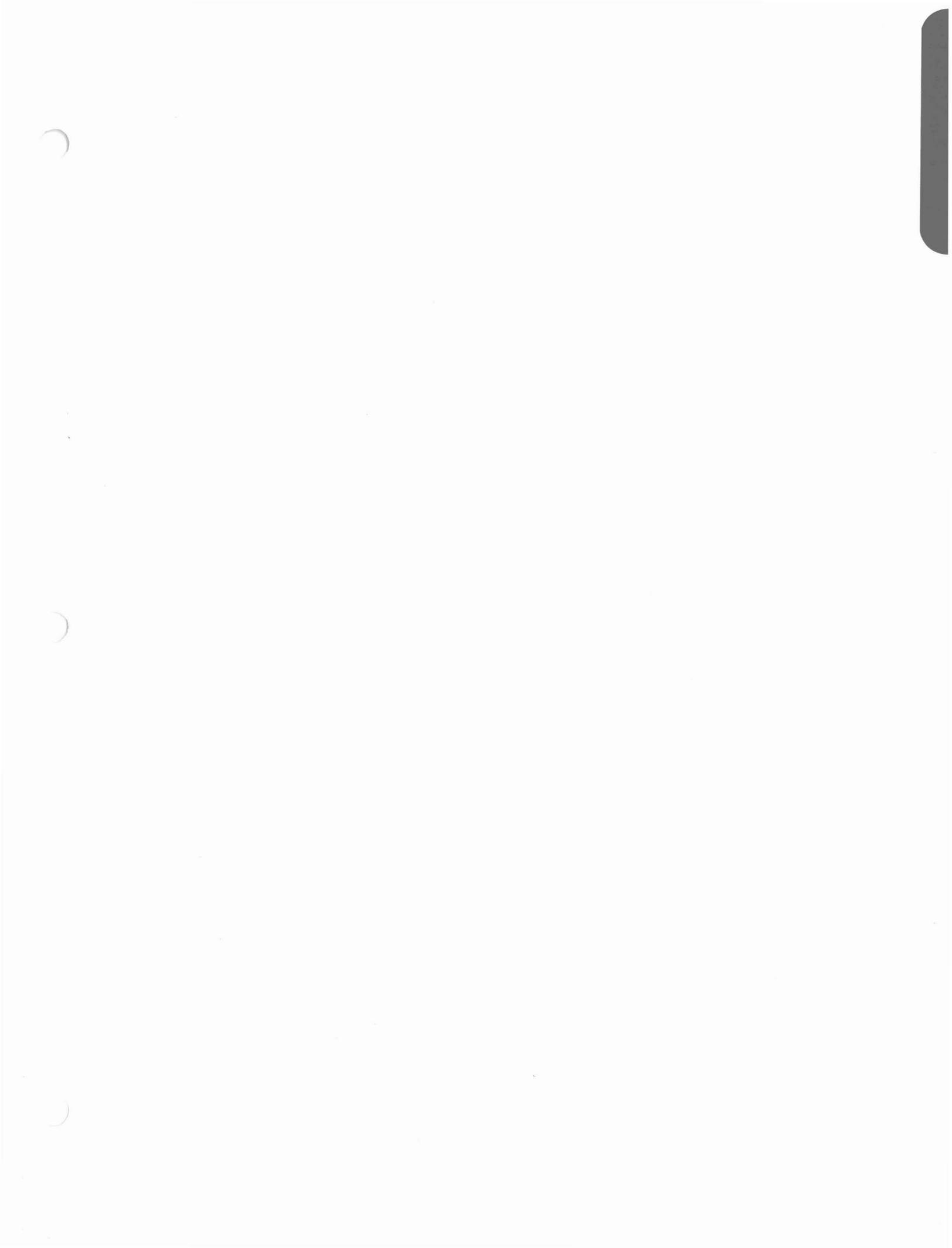
If you have any questions concerning this request, please give me a call at (602) 248-8808.

Respectfully submitted,

GROWTH ENVIRONMENTAL SERVICES, INC.

Kim Chambers Bergsten
Environmental Scientist

cc: GES File AR390-1901



APPENDIX F
ADEQ HAZARDOUS WASTE INSPECTION REPORTS

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
Division of Environmental Health Services

HAZARDOUS WASTE INSPECTION REPORT

Company Name: IMSALCO

EPA ID Number: None

Street Address: 1393 South Reems Road

City/State/Zip: Goodyear, Arizona 85338

Phone Number: 247-5560

Mailing Address: P.O. Box 1233 Goodyear, Arizona 85338

Facility Representative(s):

1. Don Hinrichs, Operations Manager

2.

3.

A.D.E.Q. Representative(s):

1. Lynn Laszewski

2. Mike Osweiler

3.

Other Participants/Agencies:

1.

2.

Note: All regulatory citations to 40 CFR are as adopted by the Arizona Administrative Codes (AAC) R981801 et seq.

tw:hwrpt.

GENERAL INFORMATION

The following areas were reviewed during the inspection:

- 1) Catch basin (see picture 1): ~10' deep hole has been excavated in the center of the production area to catch overflow from settling ponds. Mr. Hinrichs stated that the settling ponds have overflowed into Reems Road on several occasions.
- 2) Tailings and fines pile (see picture 2): Mr. Hinrichs stated that this material, ^{dross} produced by the furnace onsite, is presently sold to Exothermic manufacturers for hot tops on steel.
- 3) Excavated area (see picture 3 and "trench" on waste unit drawing): Mr. Hinrichs stated that the previous owner had buried material in the SE corner of the property. Hinrichs is excavating this material and hopes to donate it to the fire department for training.
- 4) Dross pile settling pond (see pictures 4-8): Water used in the milling process is pumped from the primary settling ponds (see pictures 13 & 14) to the top of the east dross pile for disposal.
- 5) Processing area (see pictures 9-19): the dross is processed by the following sequence =
 - i) Grizzly (see pictures 11 & 15) large pieces are sieved from the dross.

GENERAL INFORMATION

- ii) Mill (see picture 12) dross is further reduced in particle size. Water used in the mill is discharged to a primary settling pond south of the mill (see pictures 13 & 14) before disposal in settling pond on east dross pile. A smaller west mill also has a primary settling pond (see picture 19) which discharges to the large mill settling pond. Both primary settling ponds are concrete lined according to Mr. Hinrichs.
- iii) dryer (see picture 16) Milled material is dried prior to processing in the furnaces.
- iv) furnaces (see pictures 9, 17 & 18) facility has 4 furnaces, 3 dry bath furnaces (picture 17) and 1 wet bath furnace (picture 18). The wet bath furnace utilizes NaCl and potash for insulating. Baghouses are used to control ^{the} emissions. Baghouse dust is recycled thru the furnace. Waste from the furnaces are stockpiled onsite in the NE corner of the property (see pictures 20 & 21 and samples IM050 & IM051).
- v) South dross pile has been onsite since Mr Hinrichs was hired 3 years ago. Hinrichs stated that the pile serves as a "wind break" for the furnaces.

I. HAZARDOUS WASTE DETERMINATION
(262.11/R9-8-1861)

1. Business Activity/Manufacturing Process Descriptions:

Process aluminum dross (low grade black dross).
Dross is crushed, milled, and dried prior to
processing in the 4 furnaces to make aluminum sows.

2. Other activities/permits. (Drywells; septic/sewer;
landfill/solid waste service; air quality permits; underground
tanks permit; groundwater permit; NPDES and etc.,)

2 septic systems

2 water wells

2 - 5000 gal UST for diesel fuel registered with ADEQ

3 - settling ponds for mill water

3. Waste process Descriptions:

(List/describe generation processes and waste streams accepted
from off-site; specify if accepted from off-site)*

used oil - stored in 250 gal Above ground tank and
recycled.

parts cleaner - Safety Kleen

baghouse dust - returned to furnace

settling pond sludge - added to dross piles and processed

furnace "rocks" - waste from furnace stored onsite and
used in concrete on site.

55 gal drums & iron/aluminum trap - recycled with
Copperstate

* Aluminum dross - received from offsite primarily from California

B. Storage Treatment and Disposal

Comments

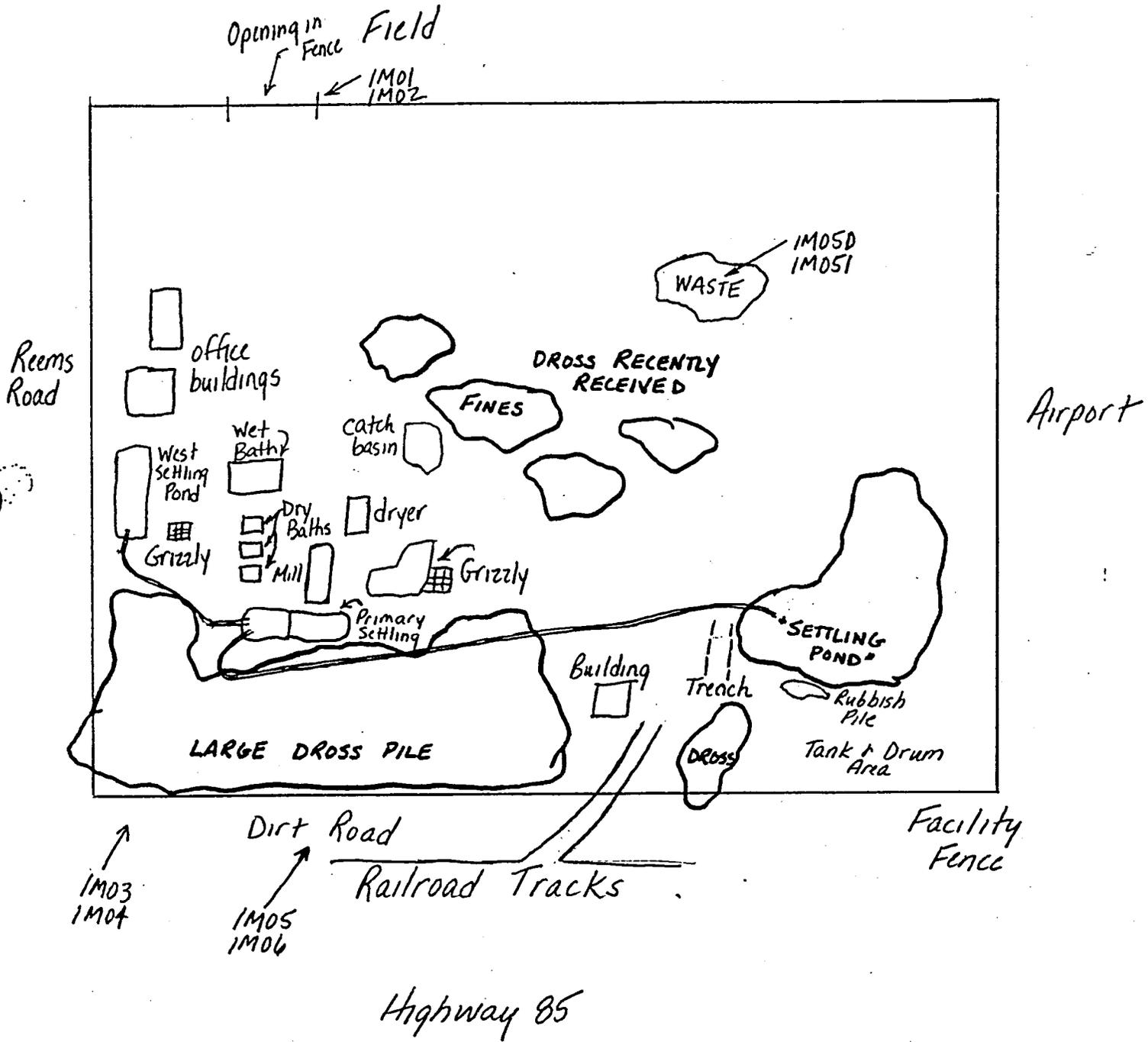
- Y N 1. Is the facility storing, treating or disposing of hazardous waste? (See 260.10, 261, 262.34).
- Y N 2. Has the facility applied for and obtained a permit, been accorded interim status, or been allowed under 270.1c.2 & 3 (see 265.1c/264.1g) before storing, treating, or disposing hazardous waste (R9-8-1870.B)?
- Y (N) 3. Has the TSD facility qualified for interim status (270.70)?
- a. Existing since:
b. Notified? Date:
c. Submitted Part A application (270.10)? Date:
- Y N 4. Has the TSD facility added any of the following not previously identified in a Part A application:
- a. New hazardous wastes
b. Increased design capacity
c. Changes in process
d. Changes in ownership or operator?
- Y N 5. Has the TSD facility filed revised Part A applications and obtained Department approval (b, c, and d only) for each of any changes made as described above (270.72)?
- Y N 6. Have changes been made in a TSD facility since November 19, 1980 that amount to reconstruction (270.72e)?

Facility has been speculatively accumulating aluminum dross for an undetermined number of years. A waste determination has not been performed on the dross.

7. WASTE UNIT LOCATION DRAWING

Locations are approximate
Not to Scale

2
1



wp:draw

Waste Determination
Page 6

Comments

8. Hazardous Waste Determination Method (R9-8-1862A):
- Y N Has the generator examined each of its solid wastes to determine if any are hazardous wastes (H.W.) (262.11)?
- Has the generator:
- Y N a. Determined if waste is excluded from regulation in 261.4 (262.11a)?
- Y N b. Determined if waste is listed as a H.W. in Subpart D (262.11b)?
- c. Determined if waste is identified in Subpart C by either:
- Y N i. Tested the waste (262.11c.1)?
- Y N ii. Applied knowledge of the hazard characteristic of the waste in light of the materials or the processes used (262.11c.2)?
- Y N 9. Has the generator documented the waste determination in writing and retained records for three years (262.40C)?

Furnace "rocks" have not been analyzed for hazardous waste content (see pictures 20 & 21; Samples IM050 & IM051)

Aluminum dross has not been analyzed for hazardous waste content (see pictures 4, 5 & 6)

Impoundment sludge and wastewater has not been analyzed for hazardous waste content (see pictures 13, 14 & 19)

HAZARDOUS WASTE INSPECTION
Comments and Probable Violations

TO: Hazardous Waste Compliance/Enforcement ADHS

Facility Name: *IMSALCO*

Inspection Date: *3/17/88* Previous:
 Facility Notified: *4/26/88*

EPA ID Number: *None*
 Report Writer: *Laszewski*

Suggested Priority: *804*
 Referred By:

	FACILITY	H.W. COMPLIANCE	AZ AG CRIMINAL	EPA	OTHER
Transmittal Dates:	x	x	x		
Report Supplement(s)			<i>Paul Guimby</i>		<i>Groundwater Bill Wiley</i>

	SAMPLE ANALYSIS	PHOTOS	TRANSCRIPTS	OPERATING PLANS (specify)	OTHER (specify)
Evidence Pending					
Supplement Dates:	<i>8 sample results pending</i>				<i>tenative impoundment sampling date 5/20/88</i>

Suggested
Referrals:

RECEIVED
 MAY 17 1988
 ADHS COMPLIANCE

PHOTO LOG

Date: 4/26/88

Location: IMSALCO

Camera: Nikon

Photographer: Laszewski

Lens: Regular

Weather: Clear

Film: Kodacolor VR6100

Photo No.	Direction	Description
1	South	Catch basin for runoff for "settling ponds" ~ 10' deep
2	East	Tailings and fines pile sold to exothermics for hot tops
3	North	Excavated material
4	SE	"Settling pond" on dross pile
5	South	" "
6	East	" "
7	South	Edge of dross pile which contains "settling pond"
8	NE	Dry "settling pond" on top of dross pile
9	West	Furnace area
10	West	"Hot skim" unloaded from furnace
11	North	"Grizzly"
12	West	Mill
13	West	Primary "settling pond" south of mill
14	NW	Primary "settling pond" south of mill
15	East	west side of "grizzly"
16	West	Dryer

WS: photo

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF WASTE PROGRAMS

HAZARDOUS WASTE INSPECTION REPORT

INSPECTION DATE: 10-Apr-90

COMPANY NAME: IMSALCO

EPA ID NUMBER: none

STREET ADDRESS: 1393 S. Reems Rd.

CITY/STATE/ZIP: Goodyear, AZ 85338

TELEPHONE NUMBER: 247-5560

MAILING ADDRESS: P.O. Box 1233
Goodyear, AZ 85338

FACILITY REPRESENTATIVE(S) AND TITLE(S):

1. Gene Kulik - Plant Manager
2. Dale Zuck - Director, Marketing

A.D.E.Q. REPRESENTATIVE(S):

1. Bill Solberg
2. Monique Coady
3. Leslie Leonard
4. Al Brown

OTHER PARTICIPANTS/AGENCIES:

None

NOTE: All regulatory citations to 40 CFR are as adopted by the Arizona Administrative Codes (AAC) R18-8-201 et seq. Any omissions in this report shall not be construed as a determination of compliance with applicable regulations.

GENERAL INFORMATION

I. Introduction

On 4/10/90, a meeting was held with IMSALCO officials at the IMSALCO site. The purpose of the meeting was to better understand the processes that occur at IMSALCO. Gene Kulik, Plant Manager, represented IMSALCO during the meeting.

According to Mr. Kulik, IMSALCO was bought five years ago. The plant was originally constructed to handle dross generated by the former Reynolds Aluminum plant. Forty percent of the current business involved dross conversion. The dross is received from the primary, secondary, extruding, and beverage can aluminum industry.

II. Dross Conversion Process

a. Incoming Dross

Incoming dross is weighed and placed in specific locations (photo 1). Because customers are paid on the aluminum content, each load of incoming dross is stored separately. The dross must have 8 to 10% metallic aluminum to be recyclable. The dross is typically processed within 30 days since water and weather will oxidize the dross. There are two kinds of dross: white and black. The black dross is from the secondary aluminum industry where flux is used in the process (photo 7). The black dross contains approximately 12% aluminum. White dross is from the primary aluminum industry where no flux has been utilized. The white dross has a higher aluminum content.

b. Wet Mill

The dross is then sent to a crusher after which it goes to a wet mill. The wet mill washes off the salts and oxides from the dross. The wet mill has three by-products: 1) aluminum fines (photo 2); tailings or aluminum oxide (photo 5); and flux (salt and potash). The aluminum fines are blended to contain about 25% aluminum and are used in the steel industry for hot toppings (photo 6). The flux is utilized in the furnace.

c. Tailings

The slurry from the wet mill is first sent to concrete lined impoundment (photo 11). The slurry is then pumped to the top of the tailings pile which rests on native soil (photo 8). The water evaporates off and percolates through the tailings

pile. The tailings left behind is a salt laden aluminum oxide (photo 9. Mr. Kulik indicated that 70 to 80% of the tailings on the IMSALCO site was processed from the Reynolds plant. This dross cannot be recycled in the cement industry because of the high chloride content.¹ IMSALCO is currently attempting to separate the aluminum oxide from the salt as it comes off wet mill slurry. IMSALCO constructed a new lined evaporation pond to accommodate this pilot project (photo 10). The aluminum oxide is removed before discharge to the pond. The pond evaporates the salt water and the salt left behind would be utilized as flux in the furnace.

d. Furnace

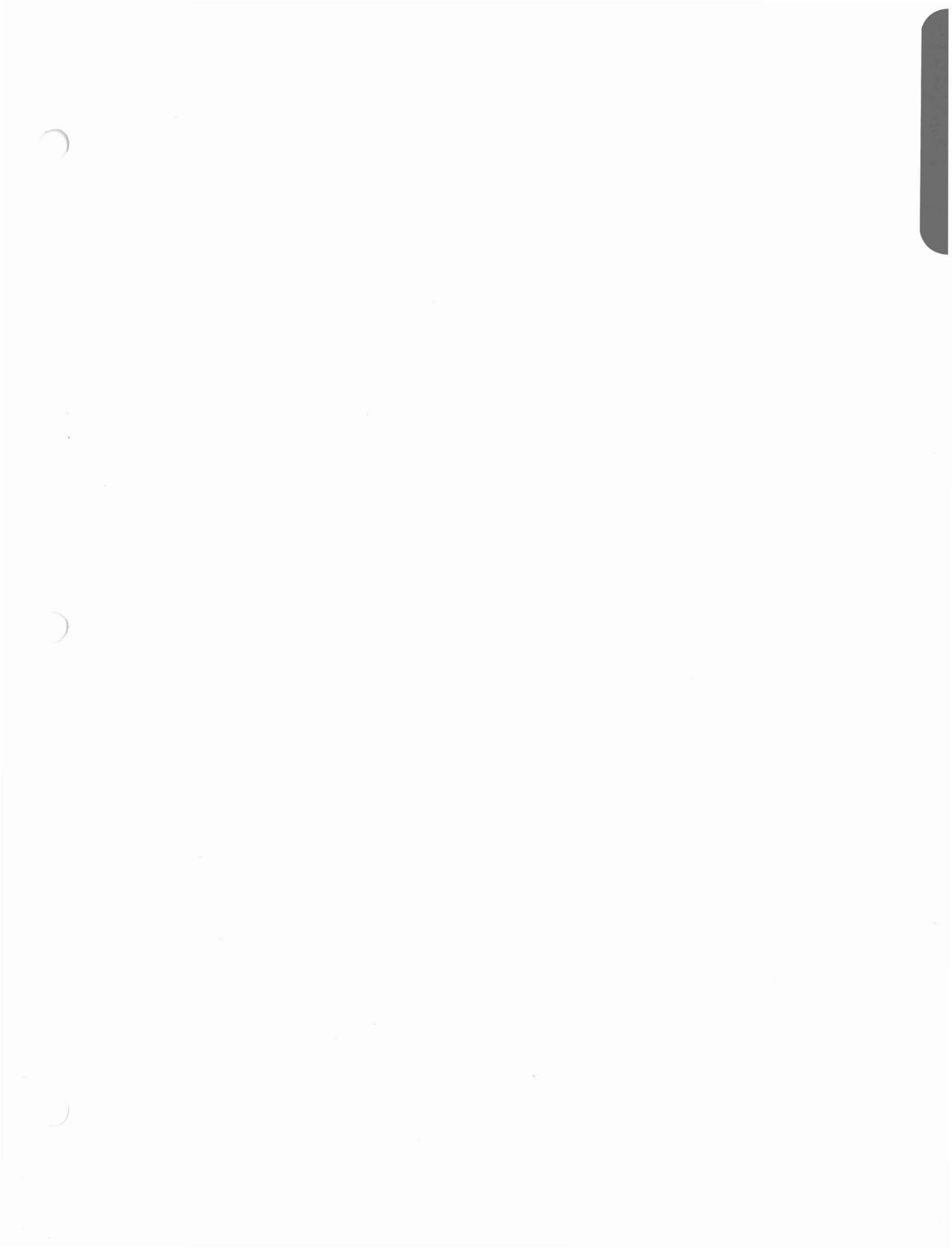
After the wet mill, the crushed material is sent to the furnace. The furnace produces three by-products: 1) aluminum; 2) dross or skims (photo 3,4); and baghouse dust. The dross is put back to the beginning of the process. The baghouse dust is collected in a hopper and mixed with salt to be reused as flux in the furnace. The dust is 80% NaCl and off-white in color.

III. Other

Mr. Kulik indicated that wet dross can burn up. He has had two experiences (not at IMSALCO) with wet dross burning up a truck. IMSALCO does not recycle sweat furnace dross any longer. Mr. Kulik indicated that this was because of on-going State involvement in Tucson. IMSALCO received a test load of dross from Kotz about two years ago. According to Mr. Kulik, it was not recyclable because it had no aluminum. IMSALCO also tested the Davis-Monahan dross and had the same results as Kotz as far as aluminum content.

The old west impoundment noted and sampled in the 1988 inspection has since been removed. Mr. Kulik indicated that the former company used this impoundment as part of an air pollution control system. The ADEQ samples were non-hazardous.

1 This was confirmed in a 5/10/90 meeting with Cal Mat.



APPENDIX G

BIBLIOGRAPHY

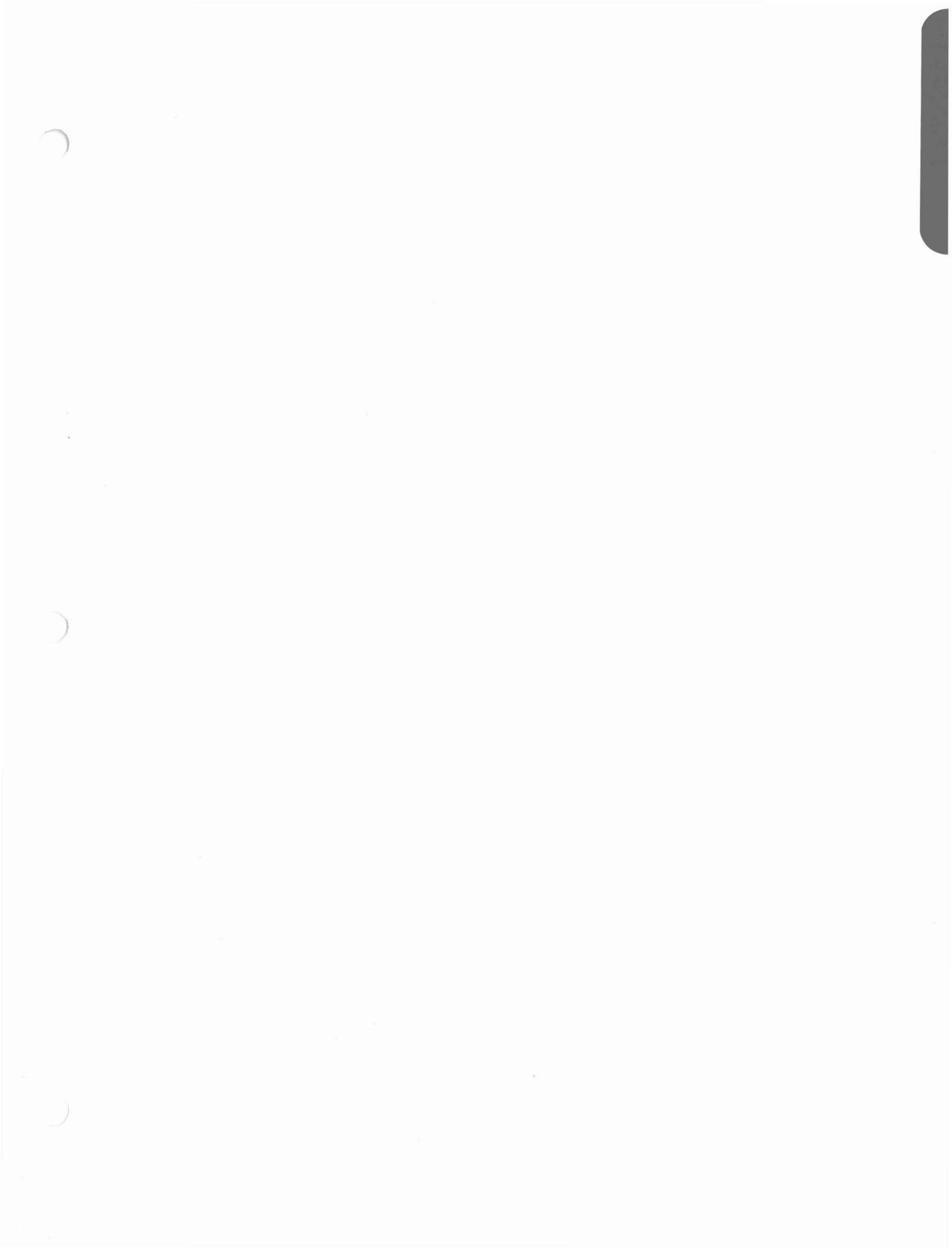
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Waste Programs Division Remedial Projects (WQARF), Superfund Information Packet, December, 1993



APPENDIX H

**QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS
PARTICIPATING IN PHASE I ENVIRONMENTAL SITE ASSESSMENT**

KIM CHAMBERS BERGSTEN
Environmental Scientist

PROFESSIONAL SUMMARY

Ms. Bergsten is an Environmental Scientist for GROWTH's Phoenix District. She performs Phase I and II environmental site assessments (ESAs) for real estate transactions involving major institutions, developers, municipalities, and county agencies. Ms. Bergsten has conducted and supervised soil sampling programs to assess the vertical extent of contamination including petroleum hydrocarbons and pesticide contamination. She has provided on-site oversight for removal of underground storage tanks (USTs). She has expertise as an on-site field biologist for identification of endangered plant and animal species, and is an AHERA-certified building inspector and management planner.

PROFESSIONAL EXPERIENCE:

- Ms. Bergsten has 5 years of involvement in performing Phase I and Phase II ESAs of commercial and industrial properties. She has prepared more than 100 Phase I ESAs at properties ranging from apartment complexes to resort hotels and golf courses, from small commercial/industrial facilities to airport support and maintenance operations, and from abandoned facilities to undeveloped parcels of more than 3,000 acres.
- Ms. Bergsten has performed monitoring of drywell closures, soil excavation and remediation projects. She has conducted environmental auditing and regulatory compliance consulting, providing specialized guidance in the areas of pesticide storage and disposal, UST compliance, and air quality. She has conducted compliance audits ranging from golf courses to equipment maintenance facilities.
- She has served as a day-to-day contact in representing the interests of clients including municipalities, county agencies, attorneys, and real estate developers.
- She has reviewed and evaluated more than 150 Phase I ESAs of real estate assets and collateral for Resolution Trust Corporation/Lincoln Savings and Loan and its subsidiaries. Ms. Bergsten reviewed and classified properties for special resources issues, developed scope of work and reviewed Phase II ESAs.
- Ms. Bergsten previously served as the environmental planner for a planned 1,030 mile long crude oil pipeline. She monitored changes in environmental statutes affecting permit acquisition and renewal, including NPDES and 404 permits. She developed the time line for the four state area construction project with restrictions on development in threatened and endangered species habitat areas and planned a mandated reseeded program in sensitive habitat areas. Ms. Bergsten prepared the draft of the oil spill contingency documents and proper notification procedures.

EDUCATION:

Graduate Work, M.A. Geography (15 hours currently), emphasis in migration, and research methods
B.S. Geography, Cum Laude, 1989 Arizona State University
Certificate, in Interdisciplinary City and Regional Planning, 1989
Wildlife Management (54 hours), emphasis on fisheries management

KIM CHAMBERS BERGSTEN (Cont.)

CERTIFICATIONS:

Certified Environmental Inspector, Environmental Assessment Association, Membership #8950
AHERA Certified Building Inspector
AHERA Certified Management Planner
40 Hour OSHA Hazardous Waste Operations (29 CFR 1910.120)

PROFESSIONAL AFFILIATIONS:

Environmental Assessment Association

DENNIS C. KNUDSEN
Manager-Business Development
Senior Civil Engineer

PROFESSIONAL SUMMARY

Mr. Knudsen is a registered professional engineer and serves as Manager - Business Development for GROWTH's Phoenix District. He has 22 years of civil and environmental engineering experience. He is responsible for technical and administrative oversight for all civil engineering design and for various projects and clients requiring environmental expertise. He heads the underground storage tank (UST) program for Growth's AT&T client in the southwest. He provides QA/QC services for the office as well as client relations, regulatory agency interfacing and business development.

PROFESSIONAL EXPERIENCE:

- Over 22 years of engineering experience in environmental engineering, site development, water distribution, sewage collection and treatment, storm water handling, hydrology, flood control, and street design.
- Responsible for UST management for AT&T Southwest Region relative to tank upgrading, site closures, contamination assessment and remediation, regulatory agency coordination and report preparation.
- Responsible for preparation of Phase I and Phase II environmental site assessment investigations and reports for the Resolution Trust Corporation (RTC) and various other clients.
- Responsible for preliminary and comprehensive asbestos surveys for the RTC.
- Conducted flood insurance studies under the National Flood Insurance program using the Corps of Engineers Hec-II computer program.
- Conducted drainage studies using computer modeling methods as well as manual methods to assist with subdivision design for parcels ranging from 0.5 to 36 square miles in size.
- Other design projects include street improvements, street lighting, storm drainage, water and sewer systems, landscaping, utility coordination, earthwork, and construction administration and inspection for various public and private clients in Arizona, Nevada, New Mexico, California and Oregon.
- Responsible for all phases of design for a 57 acre premier Paradise Valley subdivision including coordination for grading, drainage design, construction staking, earthwork quantity calculations, roads, water systems, inspection, and client representation.
- Responsible for site design of numerous projects for office, retail, and multi-family uses.

EDUCATION:

B.S.C.E., 1976, University of Idaho

DENNIS C. KNUDSEN (Cont.)

ADDITIONAL EDUCATIONAL EXPERIENCES:

Microwave and Tropospheric Scatter Communications Course - U.S. Army Signal School
Instructor Methods Course - U.S. Army Signal School
OSHA 40-Hour Hazardous Materials Training
Design and Construction of Soil Liners and Covers - American Society of Civil Engineers
Handling of Hazardous Materials - Chemical Waste Management, Inc.
Design, Operation, and Closure of Municipal Solid Waste Landfills - U.S. EPA

MILITARY RECOGNITION AND LEADERSHIP:

U.S. Army, Specialist 5th Class, 1968 - 1971
Army Commendation Medal, Viet Nam, 1970
U.S. Army, NCOIC, 15 Man Microwave Multiplex Team, Viet Nam, 1969 - 1970
U.S. Army, Communications Electronics Instructor, Fort Monmouth, New Jersey, 1970 - 1971
Honorable Discharge, 1971

CERTIFICATIONS:

Registered Professional Civil Engineer:
Arizona, 1985, No. 18156
New Mexico, 1990, No. 11081
Nevada, 1990, No. 8814

PROFESSIONAL AFFILIATIONS:

American Society of Civil Engineers
American Public Works Administration
Home Builders Association of Central Arizona
Valley Partnership
Arizona Chamber of Commerce
Arizona Management Society

COREY S. ROWLEY
Environmental Scientist

PROFESSIONAL SUMMARY

Mr. Rowley is an Environmental Scientist/Industrial Hygiene Technician for GROWTH's Phoenix District. His main duties include asbestos inspections, abatement oversight, Phase I and II Environmental Site Assessments and small scale soil remediation properties.

PROFESSIONAL EXPERIENCE:

- Mr. Rowley has 8 years of environmental experience serving as an industrial hygiene technician specializing in asbestos inspections and abatement supervision and in other related positions.
- He has conducted asbestos inspections throughout the southwest and has supervised asbestos abatement projects for schools as well as commercial and residential properties. Specific inspection and abatement supervision experience includes Camelback High School, North High School, Carl Hayden High School, the Arizona Biltmore Hotel, and Sky Harbor Center.
- Mr. Rowley has conducted environmental site assessments of commercial and industrial properties in order to provide clients documentation relating to possible environmental liability to property owners and prospective buyers.
- Mr. Rowley also has experience conducting indoor air quality surveys, hazardous noise surveys, illumination surveys, and environmental sampling.
- He has performed radon surveys for commercial and residential properties, providing recommendations for radon mitigation options.
- He has assisted in completing permitting requirements for a major oil company for underground storage tank notifications in Arizona and Nevada on state, county, and city levels.
- Mr. Rowley has performed monitoring of drywell closures, soil excavation, and remediation projects.

EDUCATION:

USAF School of Aerospace Medicine
Bioenvironmental Engineering Course, Brooks AFB, Texas, 1986

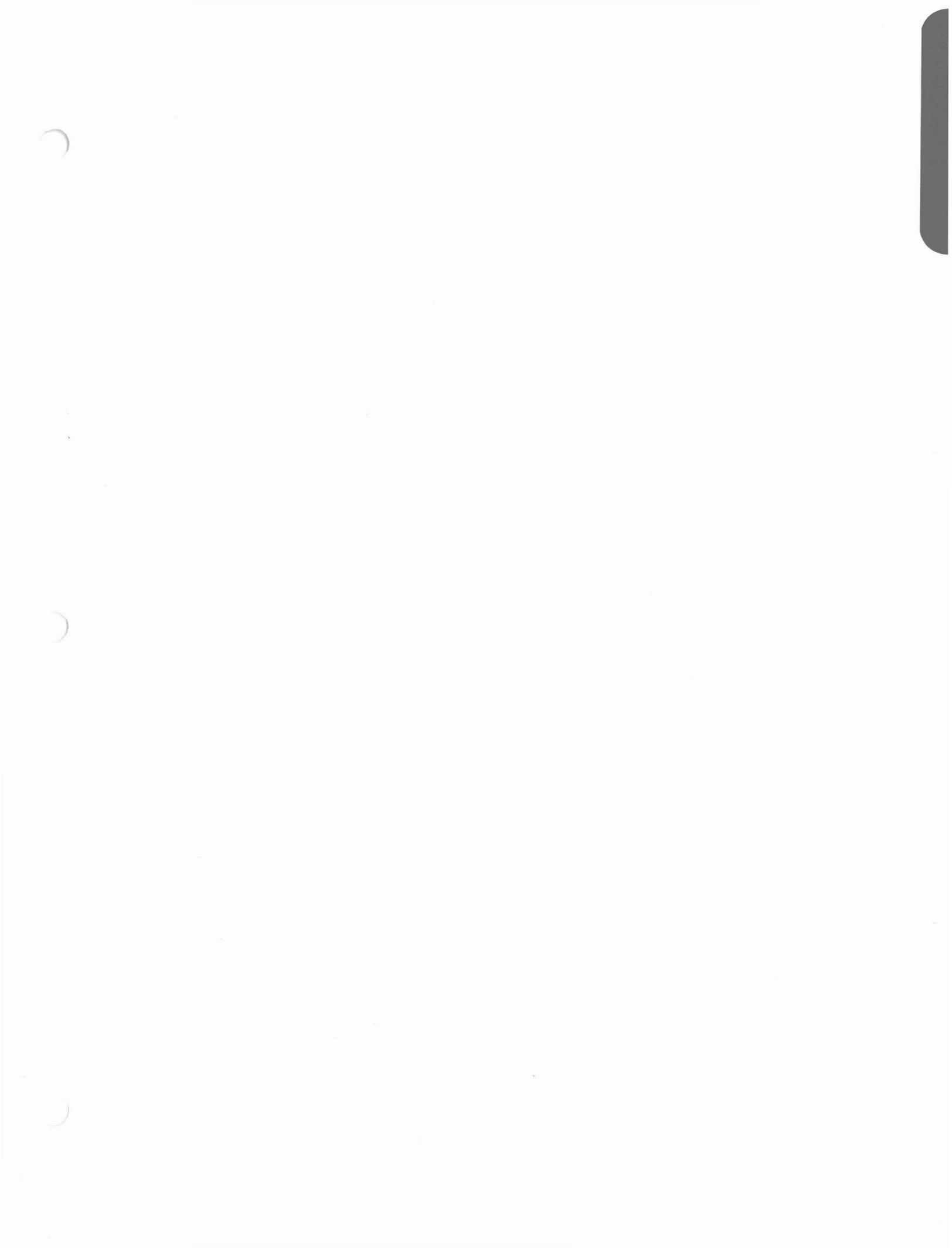
MILITARY RECOGNITION AND LEADERSHIP:

Achievement Award
Outstanding performance for the Health Services Management Inspection

COREY S. ROWLEY (Cont.)

CERTIFICATIONS:

AHERA Certified Building Inspector
AHERA Certified Management Planner
AHERA Certified Contractor/Supervisor
AHERA Certified Project Designer
EPA Approved Radon Inspector and Mitigation Contractor
40-Hour OSHA Hazardous Waste Operations (29 CFR 1910.120)



APPENDIX I
AERIAL PHOTOGRAPHS

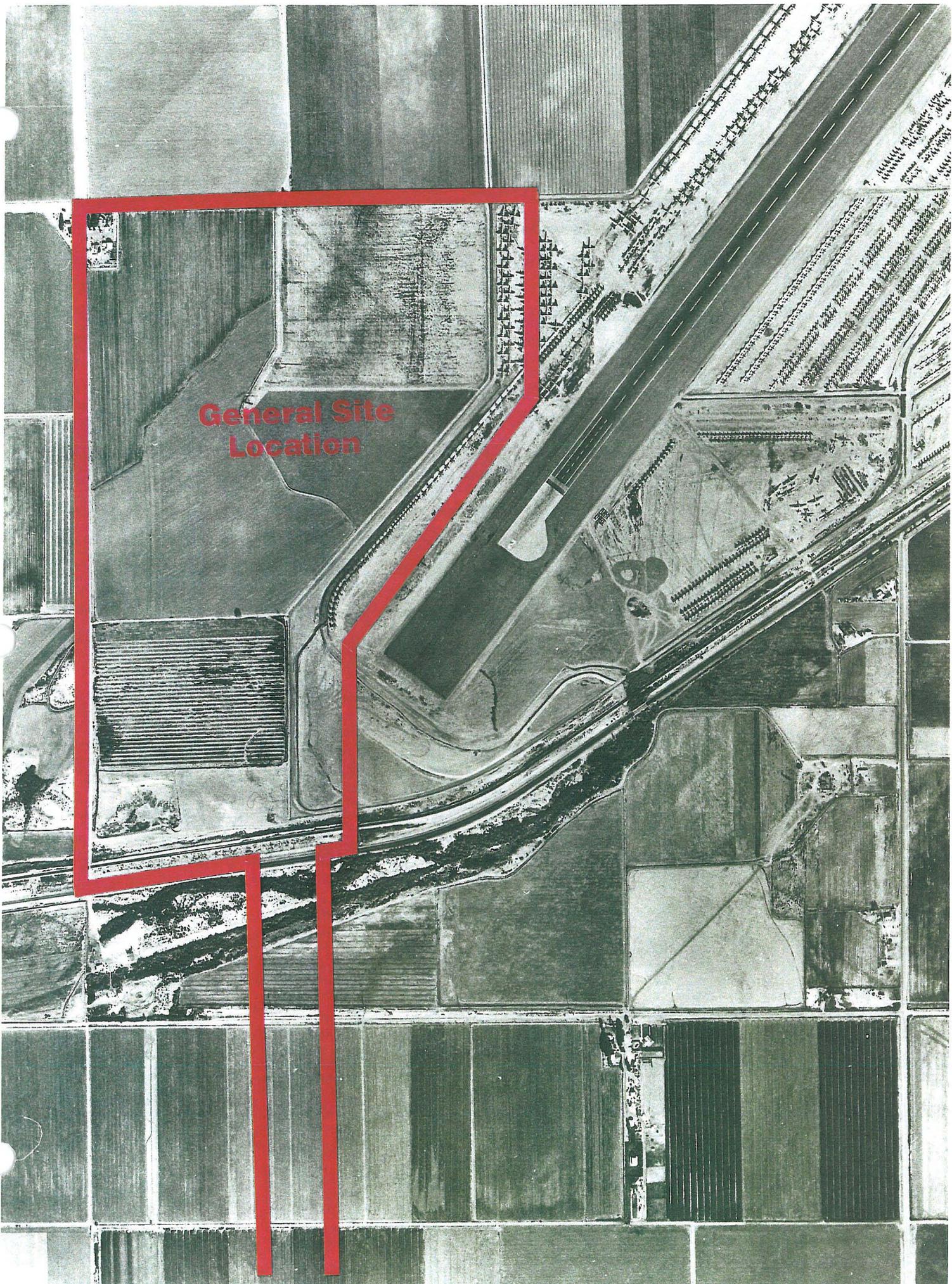
**Aerial Photograph
September 13, 1940**



**General Site
Location**

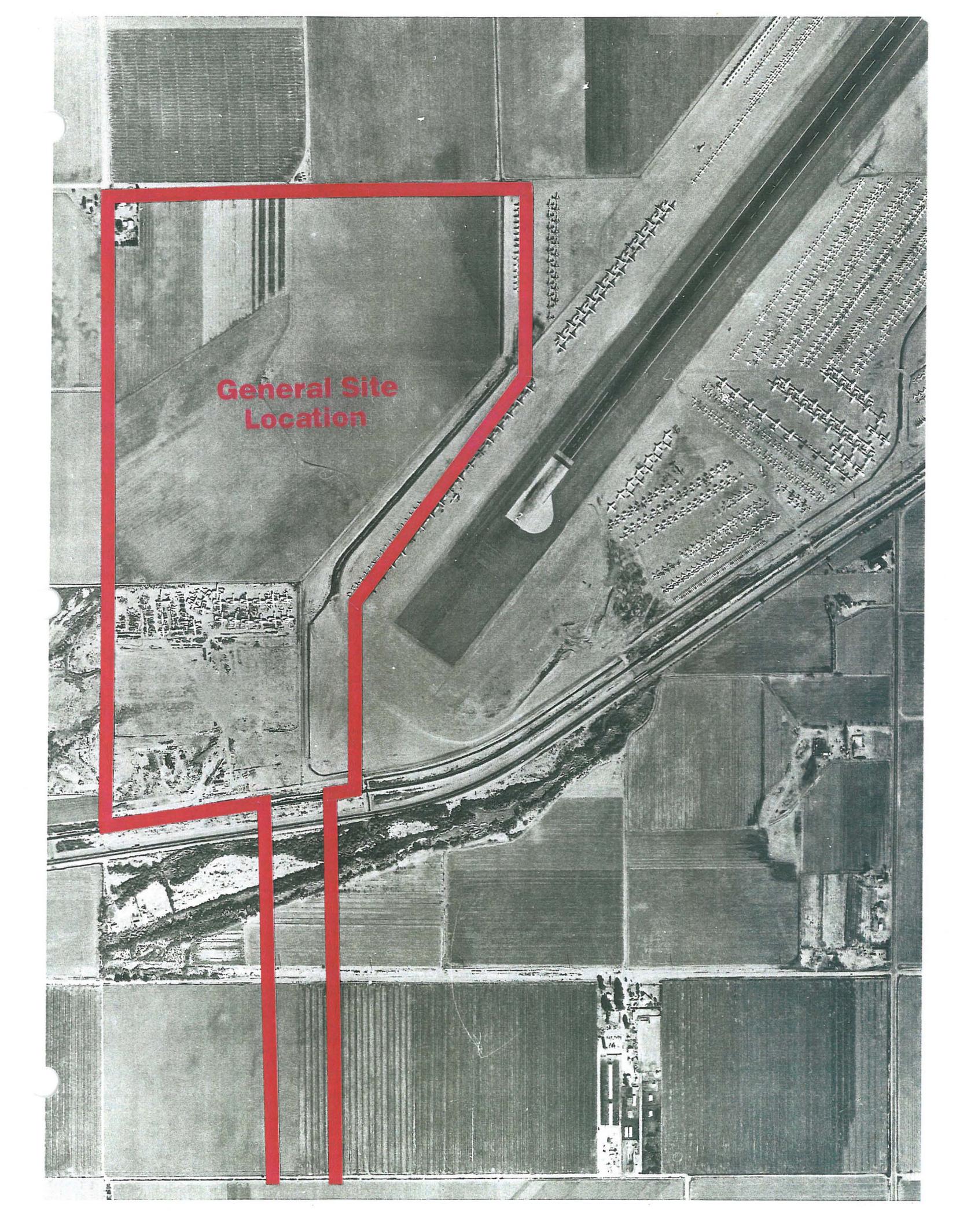
**Aerial Photograph
February 20, 1949**

**Aerial Photograph
Janaury 3, 1958**



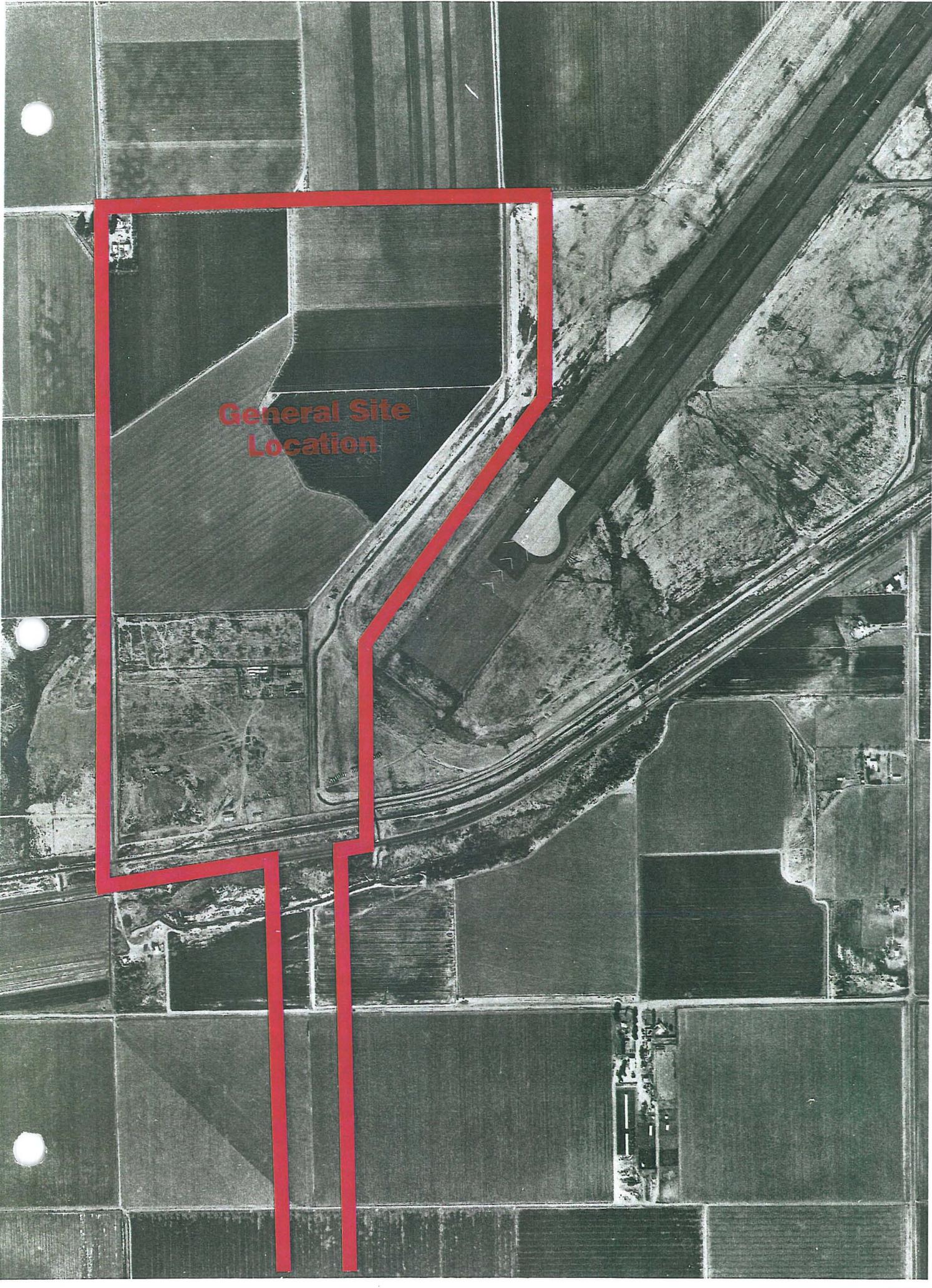
**General Site
Location**

Aerial Photograph
January 21, 1964



General Site Location

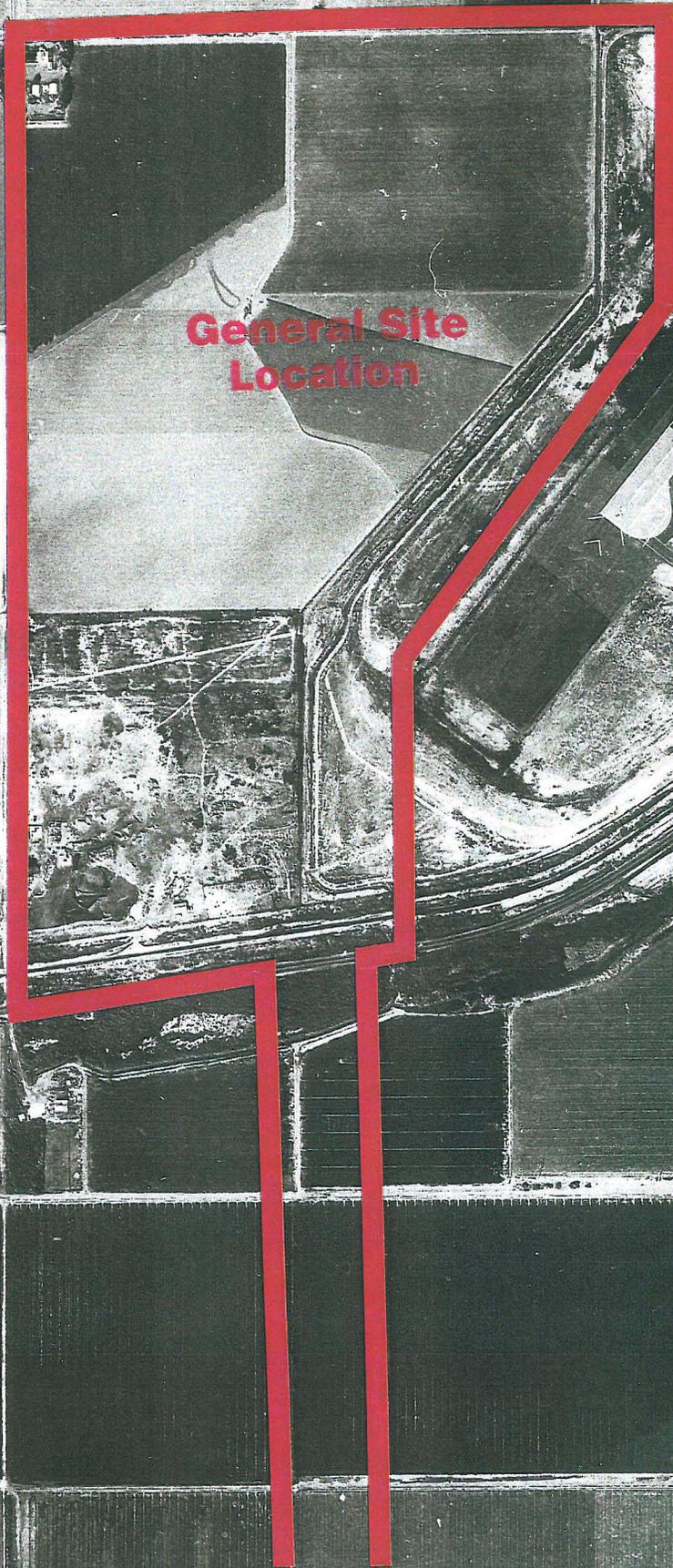
Aerial Photograph
January 26, 1970



**General Site
Location**

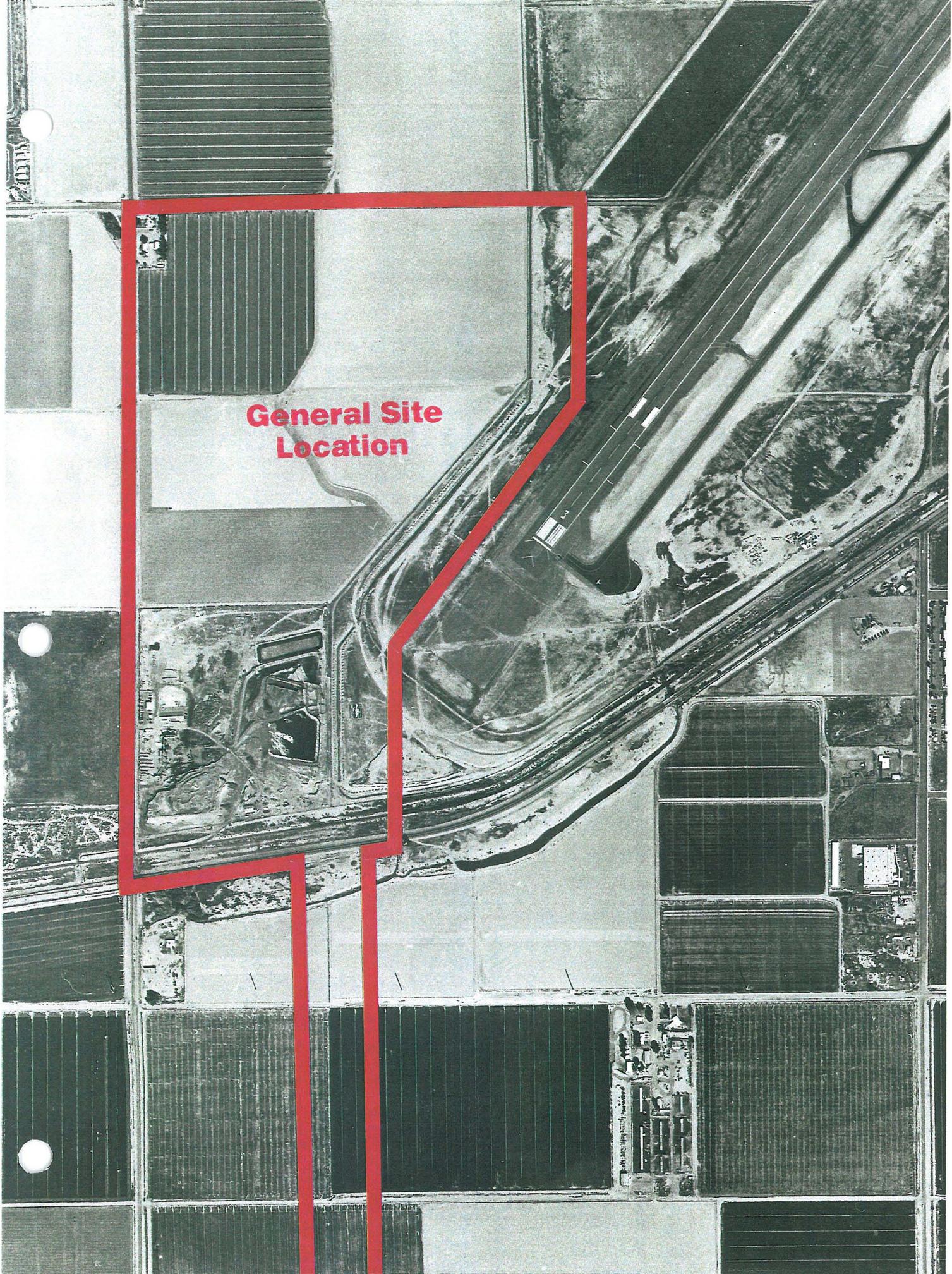
Aerial Photograph
January 13, 1979

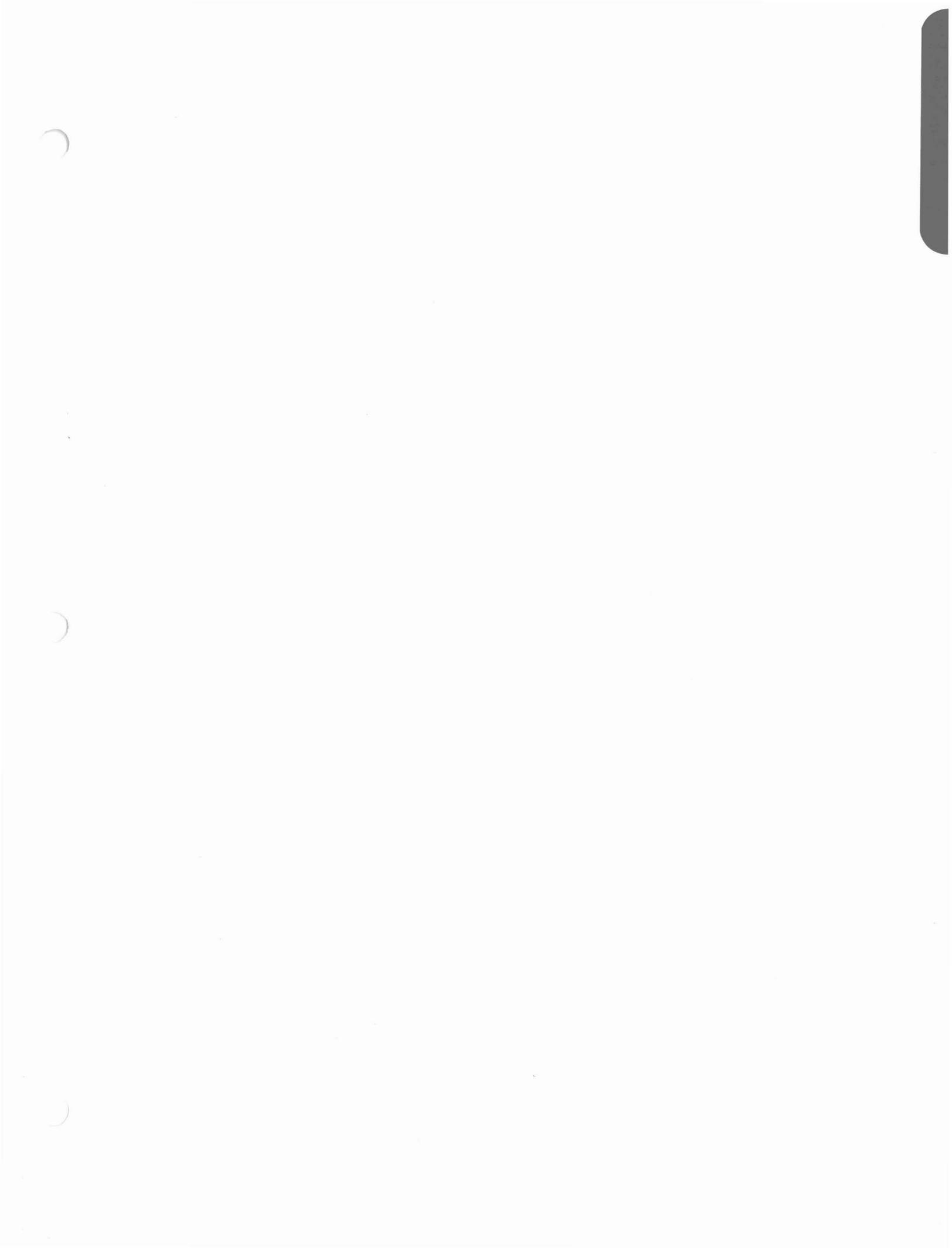
**General Site
Location**



Aerial Photograph
February 13, 1994

**General Site
Location**





APPENDIX J
SITE PHOTOGRAPHS



Photograph #1
View of drainage channel on WT10-20 looking north.



Photograph #2
View of injection well cover on WT10-20.



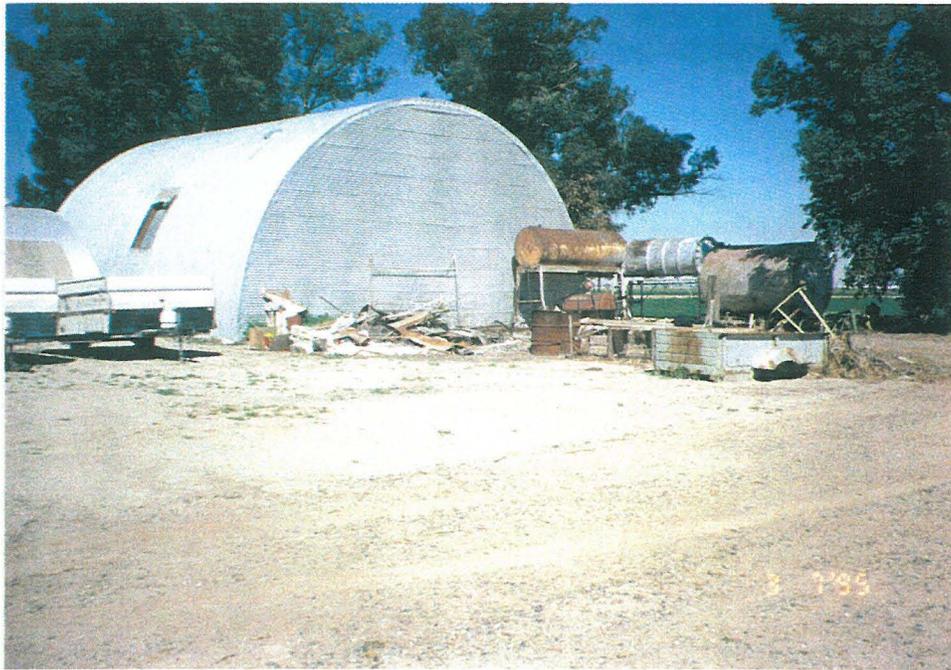
Photograph #3
View of WT10-20 looking south.



Photograph #4
View of dump site north of WT10-30. Note USTs. View is looking south.



Photograph #5
Typical view of agricultural land on Site.



Photograph #6
View of farm compound on WT10-30 looking northeast.



Photograph #7
View of asbestos containing pipe on WT10-30.



Photograph #8
View of farm compound on WT10-30 looking north.



Photograph #9
View of retention basin on WT10-28 looking east.



Photograph #10
View of eastern edge of WT10-28 looking north.



Photograph #11

View of unlined stormwater retention basin near southeast corner of WT10-28.



Photograph #12

View of maintenance building on WT10-28 and drum storage area. View is looking south.



Photograph #13

View of old aluminum oxide pile near southern edge of WT10-28. View is looking east.



Photograph #14

View of sump area south of mill on WT10-28.



Photograph #15
View of mill area on WT10-28.



Photograph #16
View of railroad spur entering the Imsalco site. View is looking to the northeast.



Photograph #17
View of aluminum oxide along railroad right of way. View is looking east.



Photograph #18
View of drainage under Highway 85. View is looking to the southeast.



Photograph #19
View of drainage near southern edge of WT10-20.



Photograph #20
View of WT10-25 looking north from Broadway Road.



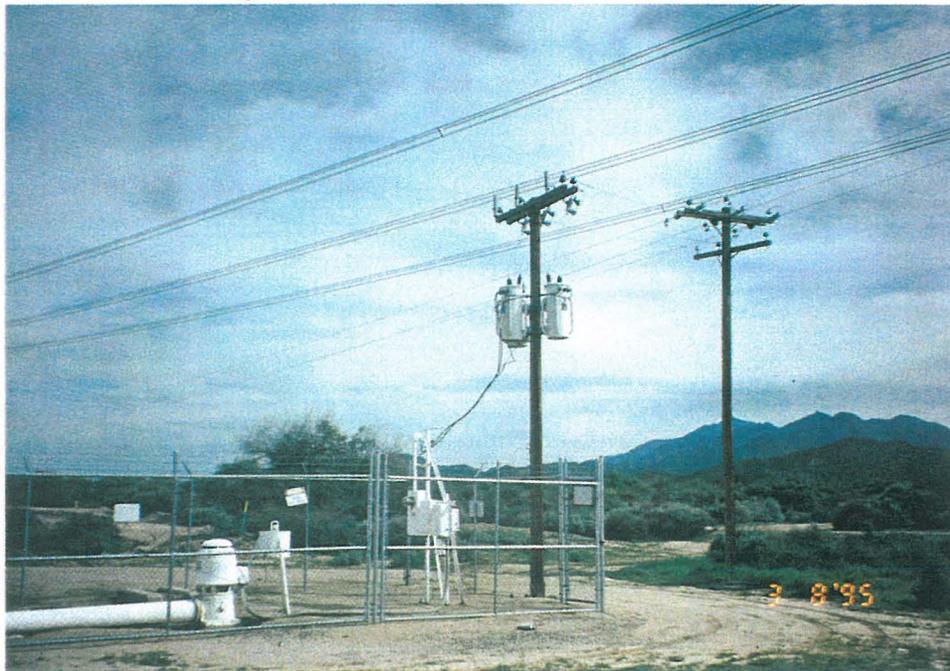
Photograph #21
View of WT10-37 looking south.



Photograph #22
View of high-tension lines crossing WT10-38. View is looking east.



Photograph #23
Looking east at the White Tanks Canal, Parcel WT10-34.



Photograph #24
View of well on WT10-34.



Photograph #25
View of dredge piles along Buckeye Canal on WT10.40. View is looking east.



Photograph #26
View of Buckeye Canal, WT10-40.



Photograph #27
View of 55-gallon drum of hardened resin on WT10-40.



Photograph #28
View of dumped bee hives on WT10-40. View is looking west.