

APPENDIX 8.14A

**Final Phase I Environmental Site Assessment
Humboldt Bay Repowering Project**

**FINAL
PHASE I ENVIRONMENTAL SITE ASSESSMENT
Humboldt Bay Re-Powering Project (HBRP)**

Humboldt Bay, California

Prepared for
CH2M HILL
155 Grand Ave.
Oakland, CA

Prepared by
E2 Consulting Engineers, Inc.
1900 Powell Avenue, Suite 250
Emeryville, CA 94608

Plan Title:

**FINAL
PHASE I ENVIRONMENTAL SITE ASSESSMENT
Humboldt Bay Re-powering Project (HBRP)**

Site Name: Humboldt Bay Power Plant

Site Location: Humboldt County

Prepared By: Chip Poalinelli September 2006

Agency or Firm: E2 Consulting Engineers, Inc.

Address: 1900 Powell Street, Suite 250

City/State/Zip: Emeryville, Ca 94608

Telephone: 510-428-4728

PG&E Project Manager: Drew Squyres

Approved:

Date:

Chip Poalinelli
E2 Project Manager

9/11/06

Distribution List

_____ Terry Williams

_____ Drew Squyres

_____ Fred Flint

_____ Doug Davy

_____ Terry Nelson

_____ Greg Lamberg



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HUMBOLDT BAY REPOWERING PROJECT (HBRP)**

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LIST OF ACRONYMS AND ABBREVIATIONS

APN	Assessor's Parcel Numbers
bgs	Below ground surface
BWR	Boiling Water Reactor
EPA	Environmental Protection Agency
HBMWD	Humboldt Bay Municipal Water District
HBPP	Humboldt Bay Power Plant
HBRP	Humboldt Bay Re-powering Plant
HWSB	Hazardous Waste Storage Building
HBRP	Humboldt Bay Repowering Plant
LCP	Local Coastal Program
LVW	Low Volume Waste
LVWS	Low Volume Waste Sump
MEPP	Mobile Energy Power Plant
MLLW	Mean lower low water
MW	Mega-watt
MWe	Mega-watt electric
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
PRC	Public Resource Code
RCRA	Resource Conservation and Recovery Act
SWMU	Solid Waste Management Unit
TPH	Total Petroleum Hydrocarbon
TTU	Transportable Treatment Unit



SECTION 1

INTRODUCTION

The Humboldt Bay Re-powering Project (HBRP) will be a load following power plant consisting of ten natural gas-fired Wärtsilä 18V50DF reciprocating engine-generator sets and associated equipment with a combined nominal generating capacity of 163 MW. This project will repower the existing 105 Megawatt (MW) Humboldt Bay Power Plant Units 1 and 2.

The project will be located at 1000 King Salmon Way, Humboldt County, California, within a 143-acre parcel currently occupied by the existing PG&E Humboldt Bay Power Plant. The existing plant is more than 50 years old and is nearing the end of its useful life. It consists of three electrical generating elements (1) a natural gas-fired power plant consisting of two steam turbine-generators (Units 1 and 2) with capacities of 52 and 53 megawatts respectively, which began operation in 1956 and 1958; (2) a 63 MW nuclear-powered boiling water reactor generating unit (Unit 3); and (3) two mobile emergency power plant (MEPP) backup and peaking units of 15 MW each.

Units 1 and 2 provide much of the electrical power for Humboldt County and northwestern California. Unit 3 went into operation in 1963, ceased operating in 1976, and is pending decommissioning. The MEPPs operate as backup units when either Unit 1 or 2 is out of operation for maintenance and also at times during peak loads.

After the completion of the HBRP, the existing MEPPs that are currently connected to the Humboldt Bay to Humboldt 115 kV line, will be disconnected and decommissioned. In addition, the Unit 1 and 2 steam turbines will be disconnected from the 60 kV systems.



Section 1.1 Purpose and Scope

The objective of the Phase I Environmental Site Assessment is to comply with the California Energy Commission requirement that a Phase I be included in the Application for Certification. The purpose of a Phase I Environmental Site Assessment is to identify, to the extent feasible, type, quantity, and extent of potential contamination at the site as outlined in the American Society for Testing and Materials (ASTM) Standards Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation: E 1527-00 (July 2000). The information collected during the Phase I Environmental Site Assessment will be used to determine if additional data are required, which would result in a Phase II Environmental Site Assessment. The Phase I Environmental Site Assessment included:

- A review of readily available records including former site use, correspondences, release documentation, and prior contamination events;
- A site visit to observe the areas used for various industrial/operational processes, and the conditions of the property; and
- Interviews with knowledgeable people, such as site owners; operators; and occupants; and a Report that includes an assessment of the likelihood that contaminants are present at the site.

Section 1.2 Limitations and Exceptions

It should be noted that a Phase I Environmental Site Assessment is completed without subsurface exploration or chemical screening of soil and groundwater beneath the site. This study does not make statements of scientific certainty regarding latent surface and subsurface conditions which may be the result of on-site or off-site sources unless historical analytical data support the conclusion.

E2 Consulting Engineers Inc. is not able to represent that the site or adjoining land does not contain hazardous waste or other latent conditions beyond that detected or observed by E2 Consulting Engineers during this Phase I Environmental Site Assessment. The possibility always exists for contaminants to migrate through surface water, air, or groundwater. The ability to accurately address the environmental risk associated with transport in these media is beyond the scope of this investigation.

The scope of this Phase I Environmental Site Assessment is not intended to be a comprehensive evaluation of the entire plant property and is limited to the footprint/adjacent impact areas of the (user-owned) proposed HBRP (See Section 2). In addition, the property is not being transferred and is being retained by PG&E. Because the land reuse for the HBRP is user-owned, the following exceptions were made from the ASTM standard sited.

- Concurrent with this Phase I Environmental Site Assessment there is an additional Humboldt Bay Power Plant MARSIMM evaluation that will specifically address potential radiological environmental impacts. Therefore, this evaluation does not



discuss or make conclusions regarding potential radiological environmental impacts. In addition, this report was not prepared in relation to a proposed or potential sale of the property.

- Because the records reviewed included regulatory records searches (SAIC 1986) and correspondence/agreements, regulatory databases were not queried as a part of this Phase I Environmental Site Assessment.
- Because adjacent land includes predominately wet-lands, only user-owned land was evaluated as a part of this Phase I Environmental Site Assessment.
- Although a Phase I Environmental Site Assessment does not generally include sampling data, several areas evaluated had previous remedial actions that included environmental sampling data. This report evaluated all available data and summarized the information in the Sections below.
- Information collected during the survey indicated that the building's, in the area of the future HBRP, drains were connected to the city's sewer system. As a result, the survey did not include a drain investigation, environmental sampling, or interior inspections of building within the boundary of the HBRP.



SECTION 2 GEOGRAPHY AND DEMOGRAPHY OF SITE SELECTED

Section 2.1 Site location

PG&E owns approximately 143 acres on the northeastern part of Buhne Point of Humboldt Bay opposite the bay entrance. PG&E also owns the water areas extending approximately 500 ft into Humboldt Bay from the shoreline (Figure 1).

The project site will be located on Buhne Point approximately 3 miles south of the City of Eureka, just north of the unincorporated community of King Salmon, and west of the unincorporated community of Humboldt Hill. The existing project site is located in unincorporated Humboldt County and is within the sphere of influence of the City of Eureka (See Figure 2). The HBRP project is located within the boundary of the existing user-owned Humboldt Bay Power Plant. The HBRP project site will utilize three areas on the property; Area A, consisting of the future access road, future HBRP location, and construction staging area; Area B, which will be used for parking; and Area C, which will be used for temporary parking for deliveries. Figure 3 shows the general arrangement and layout of the future HBRP facility. Primary access to the site will be provided via a new access road from King Salmon Way to the south of the existing cooling water channel.

Section 2.2 Surrounding Land Use

Humboldt Bay and the surrounding lowlands dominate the region north, south, and west of the site. The lowland areas around the site are primarily vacant land and are used to a limited extent for grazing beef cattle. The small community of Fields Landing is located adjacent to a lumber shipyard approximately 0.4 mile south of the HBRP site. Humboldt Hill is the dominant feature southeast of the site. Most of the mountainous area east and southeast of the site is inaccessible; however, there are several small communities located on Humboldt Hill and in the larger valleys. The City of Eureka is the largest population center in Humboldt County and is located approximately 3 miles north of the HBRP site.

The Humboldt Bay Municipal Water District (HBMWD) provides water to residential and industrial users in the Humboldt Bay area. The district operates two separate water systems. Drinking water is supplied through the domestic water system. Raw water, used only for industrial purposes, is taken directly from the surface of the Mad River and delivered, untreated, to industrial customers. HBMWD produces a capacity of 20 million gallons per day of water from five Ranney wells in the Mad River near Essex. The City of Eureka General Plan Background Report identifies three groundwater wells located within one mile of the HBRP site. These wells are shown in Figure 4.



The PG&E-owned land around the HBRP site is zoned Coastal-Dependent Industrial. The areas immediately south and east of the site are zoned Waterfront Commercial. The community of King Salmon, located immediately southwest of the site, is zoned Low-Density Residential. The Humboldt Hill area to the south and east of the site has a variety of residential zoning designations and is surrounded by land zoned for agriculture. No major new developments are planned for the area within 5 miles of the HBRP site. Areas near the HBRP site experiencing significant growth are generally situated to the south of the City of Eureka and include the communities of Bay View, Cutten, and Humboldt Hill (Battelle, 1994b).

Section 2.3 Current Land Use

As discussed in Section 1, the HBRP proposed boundary is located within the current HBPP.

Section 2.4 Topography and Meteorology

The coastal range mountains extend south from the State of Washington to near San Francisco, passing around the Humboldt Bay region. The coastal hills surrounding Humboldt Bay begin with Patrick's Point, 30 miles to the north, then extend to the southeast, then to the southwest, ending in Cape Mendocino, 23 miles from the site. The tops of these hills range from 1,500 to 2,500 ft, with the highest point (Kings Peak) reaching 4,087 ft, 40 miles directly south of Eureka. A map showing the detailed topographic features within 8 km is shown in Figure 5.

The climate of the greater Humboldt Bay region, including Eureka and the immediate coastal strip where the project site is located, is characterized as Mediterranean. Summers have little or no rainfall and low overcast and fog are frequently observed. Winters are wet, with frequent passage of Pacific storms, and temperatures are mild. Because of close proximity to the ocean and bay, the region experiences high relative humidity throughout the year. The humidity is generally highest in the late night and early morning hours when the coastal stratus and fog are most prevalent. At these times the humidity averages 87 percent. During the late morning and early evening hours, the humidity decreases to an average of 78 percent.

Section 2.5 Surface Water

The area of the proposed HPRP lies in the Eureka Plain Sub-basin of the North Coast Basin. The Eureka plain drainage basin is within the hydrologic unit defined as the Redwood Creek-Mad River-Humboldt Bay Unit. This unit can supply water to an area with a projected population of 80,000. Redwood Creek discharges directly into the Pacific Ocean 38 miles north of the proposed HBRP site, independent of Humboldt Bay. The Mad River flows west approximately 13-15 miles northeast of the site. The only major Surface Water storage in the area is provided by the 2.7-billion gallon capacity Ruth Reservoir on the Mad River,



which regulates municipal and industrial water supply for the Arcata-Eureka area. The Mad River Sub-basin presently exports water to the Eureka Plain Sub-basin, which enters the Pacific Ocean independent of Humboldt Bay. The mouth of the Eel River lies some 8 miles south of the site. The Eel River also discharges directly into the Pacific Ocean. This river is not used for potable water supply within 25 miles of the site.

With respect to the proposed HPRP site, the watersheds of Humboldt Bay and the bay itself are the most relevant Surface Water bodies. The four major creeks that drain into Humboldt Bay are Freshwater Creek, Elk River, Salmon Creek, and Jacoby Creek. Several smaller tributaries also drain into the Bay. Salmon Creek and Elk River are the nearest streams to the site; both within a mile south and north of the HBRP site, respectively. Salmon Creek and Elk River are used for watering livestock, but are not used as a potable water supply.

Freshwater Creek is the largest drainage basin in the drainage system; it drains an area of 61.73 square miles. It rises in the north-central part of T.4N, R.2E; flows west 5 miles, then northwest into the north end of Humboldt Bay. The creek has a length of 13 miles. Elk River drains an area of 51.3 square miles. It rises in the central part of T.3N, R.1E; flows northwest and discharges into Humboldt Bay near the town of Elk River. The river has a length of 12 miles with North and South Forks as principle tributaries. Salmon Creek drains a total area of 28.30 square miles. It rises in the central part of T.3N, R.1E, and Humboldt base and meridian. It flows west 9 miles, then northwest about 4 miles to the western part of T.4N, R.1W, where it enters the south end of Humboldt Bay. The lower course of the creek is marshy.

Jacoby Creek drains an area of 16.40 square miles. It rises in the northern part of T.4N, R.2E; flows northwestward to the northern part of T.5N, R.1E, where it enters the north end of Humboldt Bay. The creek has a length of about 8 miles. Other small tributaries in the watershed that drain into the bay are called sloughs.

Section 2.6 Humboldt Bay

Humboldt Bay is a tidal bay receiving and discharging ocean water through its inlet. Figure 6 shows Humboldt Bay divided into an Entrance Bay extending from Buhne Point to the mouth of the Elk River; a South Bay, south of Buhne Point; and a North Bay, north of the mouth of the Elk River and including Arcata Bay. Very little fresh water discharges into Humboldt Bay.

Humboldt Bay is a large, shallow body of water with deep channels. It is separated from the ocean by two long, narrow spits. The middle portion of the bay is joined to the ocean by a narrow channel passing between the north and south spits. The bay is approximately 14 miles long, its width ranges from 0.5 miles near its middle to over 2 miles at the south end and 4 miles at the north end, with an average depth of 12 ft mean lower low water (MLLW).



Section 2.7 Geology and Hydrology

Geologic formations in the Humboldt Bay/Eureka area are of both continental and marine origins. Recent formations differ depending on the location within the region. Holocene age fluvial deposits of loosely consolidated, discontinuous layers of gravel, sand, silts, and clay compose the most productive aquifer in the region. These deposits are found in the floodplains of the Elk, Eel, and Mad Rivers. Dune sands along the North Spit of Humboldt Bay also produce groundwater from a freshwater lens overlying seawater.

Soil samples at the site show 1 to 5 feet of fill material overlying silty clay, gravelly clay, sandy clay, and clay and silt deposits to a depth of 10 to 11 feet (Mittelhauser Corporation, 1985).

There are two shallow groundwater zones (extending to roughly 100 ft) on the HBPP site, which are hydrologically distinct but interconnected (Mittelhauser Corporation, 1985). Holocene deposits consisting of tidal marsh deposits (bay mud) of clay and silt compose the uppermost aquifer, with the water table at a depth ranging from 4 to 7 feet below ground surface. The clay and silt layer extends to a depth of 20 to 35 feet below ground surface. Hydraulic conductivities of this layer were estimated to be in the range 10⁻⁵ to 10⁻⁶ centimeters per second (cm/sec) (Mittelhauser Corporation, 1985).

Pleistocene deposits include fluvial deposits found on hillsides bordering river valleys and the coast, and the Hookton Formation, which is the main source of groundwater supplies near the HBPP, and the second most productive aquifer in the region form the second shallow groundwater zone. The Hookton Formation is composed of poorly consolidated sand and gravel layers interbedded with silt and clay layers of shallow water marine, estuarine, and continental origins. It extends from about 25 to 30 feet below ground surface to a depth of approximately 1,000 feet. The upper most aquifer in this formation is semiconfined in a layer of sand and gravel that extends from around 25 to 100 feet below ground surface. Groundwater in this layer appears to be tidally influenced. Hydraulic conductivity ranges from 10⁻² to 10⁻⁴ cm/sec. Additional confined water-bearing layers of sands and gravel are found deeper in the Hookton formation.

Section 2.8 Groundwater Use

Groundwater in the region is used for irrigation, industrial water supply, public and domestic water supplies. Except for the water supply for the City of Eureka, which is supplied by surface water from the Mad River, all of the domestic, industrial and agricultural water needs in Humboldt County are met by Groundwater. In the area extending from the Eel River Valley north to the Mad River Valley, the quantity of Groundwater that was pumped for all purposes was nearly 9 billion gallons in 1975. This water is extracted mainly from shallow wells in alluvium and terrace deposits of the Eel, Mad and Van Duzen River Valleys. Sands of the Hookton and Carlotta Formations are also



important sources of Groundwater, but well yields are generally less than from the alluvium.



SECTION 3 USER PROVIDED INFORMATION

Section 3.1 Title Records

The proposed HBPP property will be located partially in the southwest quarter, and in the northwest quarter of the southeast quarter, of Section 8, and partially within the north half of the northwest quarter of Section 17, both in Township 4 North, Range 1 West, HB&M. The County Assessor's Parcel Numbers are APN 305-131-34 and 305-131-35. A copy of the Deed for the HBPP, which includes the legal description of the property, is located in Appendix A of this report.

The proposed HBRP project will be located within the boundary of the existing user-owned Humboldt Bay Power Plant. The HBRP project site will utilize three areas on the property; Area A, consisting of the future access road, future HBRP location, and construction staging area; Area B, which will be used for parking; and Area C, which will be used for temporary parking for deliveries. Figure 3 shows the general arrangement and layout of the future HBRP facility. Primary access to the site will be provided via a new access road from King Salmon Way to the south of the existing cooling water channel.

Section 3.2 Property Use Information

On February 8, 1952, PG&E acquired from Eureka Ship Builders, approximately 137 acres of land, the current boundary of the HBPP (See Appendix A). Based on aerial photos taken in the mid 50's, the land consisted of marsh land, open land, access roads, and two structures (rumored to be a farm house). Other than the aerial photo information, previous use of the land was not available. Aerial Photos B-1 and B-2 are provided in Appendix B.

The facility currently consists of two fossil fuel generating units (Units 1 & 2), a nuclear powered unit (Unit 3), and two mobile gas turbine units. The nuclear unit ceased operation in 1976. The facility has maintained the Part A notification as required by the Resource Conservation and Recovery Act (RCRA) for the waste generation activities at the site.

Wastewaters from boiler and evaporator blowdown, metal cleaning operations, and low volume sources in Units 1 and 2 were treated by neutralization and sedimentation in the two surface impoundments. Sludge from ponds were collected and transferred to a Class 1 disposal facility. The supernatant from the impoundments was discharged to Humboldt Bay in accordance with NPDES permit CA0005622.

Other wastes generated at the HBPP included waste asbestos insulation, waste oil and oily materials, and waste paint thinners and sludge. These wastes were stored in two drum storage areas described in Section 3.3.



Section 3.3 Owner Information

The following Section provides information collected during interviews and records review regarding operations and waste streams related to Areas A, B, and C of the proposed HBRP.

Section 3.3.1 Area A

As illustrated in Figure 3 Area A is located along the eastern boundary of the HBPP.

Section 3.3.1.1 Surface Impoundments

The Surface Impoundments were operated under a Hazardous Waste Facility Permit and served as the treatment units for wastewaters generated on site by operation and maintenance activities in Units 1 and 2 until closure activities were completed on November 15, 1996 (Figure 7).

The Surface Impoundments received boiler and evaporator blowdown waste, air preheater and fireside washes, and metal-cleaning waste. The boiler blowdown was reportedly composed of sodium phosphate, sodium hydroxide, sodium sulfite, sodium sulfate, and sodium chlorite. Cleaning waste were reported to be composed of ammonia, hydrochloric acid, ammonium bifluoride, sodium bromate, and metals which include iron, copper, vanadium, chromium, zinc, and nickel.

Sludges from both Surface Impoundments were collected and transported to a Class 1 disposal facility.

In 1996, liquid and sludge were removed and treated, the HDPE liner was decontaminated, and the waste products of these activities were treated by a state-permitted transportable treatment unit (TTU). Following decontamination of the impoundments, samples were collected and analyzed for components of the wastes (selected metals) to evaluate the completeness of closure activities. Wipe samples from the top liner of the decontaminated impoundments indicated that metals were adsorbed to portions of the liner at relatively low concentrations. Metals concentrations in the perimeter soil borings were consistent with background concentrations, indicating that operation of the impoundments has not affected adjacent areas. A risk evaluation of the results was completed in accordance with state and federal guidance, and concluded that the metals concentrations in soil and liner wipe samples did not pose a significant risk and were protective of human health and the environment (Kintr Environmental, Inc., 1997).

The wastewater pipeline, which historically conveyed non-hazardous and hazardous solutions from Units 1 and 2 to the Surface Impoundments, was also closed in 1996 (Figure 8). A leak occurred in the wastewater pipeline prior to closure of the Surface Impoundments. The pipeline was purged with clean water and pressure tested. Approximately 180 feet of the pipeline from the point where it is buried near Unit 2 to the Low Volume Waste (LVW) sump (called run A) were removed and the adjacent soil remediated. The remainder of the pipeline from the LVW sump to the value box near the



Surface Impoundments (called Run B) was not evaluated by soil testing and was not replaced (Figure 9).

Soil was also remediated adjacent to the valve box (Figure 9). Verification soil samples from the excavations near the valve box and wastewater pipeline in Run A indicate that the affected soils were completely removed in these areas and metals concentrations in the side walls and bottom were consistent with background concentrations.

Although Run B failed the pressure test, soils adjacent to it were not excavated based on a conservative risk evaluation approach. This approach assumed that soils with the highest metals concentrations adjacent to Run A were present in the soils adjacent to Run B. The risk evaluation indicated the concentrations of metals found in soils associated with the wastewater pipeline did not pose a significant risk to human health or the environment.

The area around the surface impoundments have been addressed ("Clean Closed") through the RCRA process as approved by California Department of Toxics Substance Control and the California Regional Water Quality Control Board (Order No. 98-18).

Section 3.3.1.2 Hazardous Waste Storage Building (HWSB)

The HWSB is located just west of the surface impoundments (See Figure 9). The HWSB was permitted to store up to 200 drums of hazardous waste for up to one year. One of the two separate storage areas was used for drummed solid wastes and the other was for drummed liquid wastes. The solid wastes were primarily asbestos, oily materials, sand blast materials, boiler fireside deposits, and paint-related materials associated with operation and maintenance of Units 1 and 2. The liquid wastes were primarily oily wastes, coolants, and solvents. Each area drained to a separate external sump. No chemical analyses of these wastes were found in the material reviewed. The exterior sumps have never been used to collect hazardous liquids (Kintr Environmental, Inc., 1997).

Closure actives at the HWSB were completed on October 17, 1996. The hazardous waste drums were moved to the concrete-bermed pad, the building floor and lower walls were decontaminated, and the liquid from the decontamination activity was tested and discharged through the Oil Water Separator system in accordance with the NPDES permit. Following decontamination of the building floor and lower walls, soil samples were collected below the concrete floor and analyzed for components of the wastes in accordance with the approved *Work plan* to evaluate the completeness of closure activities. Metal concentrations in the soil were found to resemble background concentrations in soils collected around the plant, indicating that operation of the HWSB has not affected neighboring soil. On October 2, 1997 PG&E received closure certification approval from the DTSC approving "clean closure" of the HWSB.

Section 3.3.1.3 Asbestos Burial Area

The Asbestos Burial Area (SWMU #2) is located just east of the surface impoundments (See Figure 7). This area contains buried asbestos-cement board pieces. PG&E has instituted



internal restrictions to prevent disturbance of the asbestos-cement pieces; and will in the event of a property transfer notify the potential buyer of the hazardous (if disturbed) constituent on the site. This area has been addressed through the RCRA process as approved by California Department of Toxics Substance Control (Cal/EPA, December 1989). This area is in a location that will not be impacted by the future HBRP.

Section 3.3.1.4 Former Drum Storage Area

A 1981 letter to EPA from PG&E mentions a drum storage area measuring 40 feet by 80 feet that was replaced by the present hazardous waste storage building. It was located southwest of the oil water separators, in the vicinity of the present location of the fireside waste bin (See Figure 7). This storage area was used to manage drummed waste oil and waste asbestos. No chemical analyses of these wastes were found in the material reviewed. Based on interviews, it is estimated that this facility was taken out of service around 1981-1982 when the new hazardous waste storage unit was completed. HBPP has not reported any releases at this unit and no information was available regarding release controls in place (SAIC, 1986).

Section 3.3.1.5 Mobile Gas Turbine Units

The two Mobile Turbine Gas Units are located on the southeast end of the facility property (Aerial Photo B-3). The units are diesel fueled (above ground storage tank adjacent to the units) with a rated capacity of 15 MW each and are used as an emergency power supply. The units are mobile in the sense that they are contained in semi trailers. Each unit is equipped with floor drains that route oil drippings to a 55 gallon drum beneath the trailer. Full drums are stored in the hazardous waste storage area.

On April 11, 2000 drain water overflowed (approximately 3000 gallons) the Low Volume Waste Sump (LVWS) and ran into the yard and the Mobile Turbine Gas Units French Drain, which in turn routes to Buhne Sough. The boiler water was a non-hazardous wastewater normally discharged through filters to circulating water and then to Humboldt bay. Samples from the French Drain were collected and the results are summarized below:

- pH - 9.4
- Iron - 8.5 mg/l
- Copper - 3.5 mg/l

Section 3.3.1.6 Fuel Line Leak

Leakage (approximately 230 gallons) of distillate fuel oil (diesel oil) from an underground service line at HBPP was discovered on February 4, 1986 (See Figure 7). The line was excavated and removed. The extent of the soil contamination was approximately 15 feet along the length of the line at a depth of three to four feet below ground surface (bgs).



To assess the extent of lateral transport of the fuel oil in the ground, holes were augered parallel to the line approximately 12 feet on either side. Soil samples were taken from each of the holes at approximately four feet bgs. Water samples were also taken from two groundwater monitoring wells, one located within two feet of the line and another within ten feet. Soil samples collected from the augered holes indicated no contamination (< 50 parts per million [ppm]) from diesel fuel was present. A soil sample taken from the wall of the ditch above the level of the pipe indicated 84 ppm of total petroleum hydrocarbons (TPH) present. Groundwater samples collected from nearby wells indicated a TPH concentration of less than 50 parts per billion (ppb).

Any remaining contaminated soil in the trench was removed on March 6, 1986. A total of 11 cubic yards of material were removed from the excavation. The residual contamination is localized to the backfilled trench associated with the diesel transfer line. The residual diesel is degraded and is expected to continue to degrade. These concentrations were not considered to constitute a significant risk to human health and the environment (PG&E, August 1993). As specified in the CRWQCB letter dated October 6, 1993, this area requires no further action.

Section 3.3.1.7 Oil Water Separators

As shown on Figure 7, the former two Oil Water Separators were located north of the future HBRP. Wastes entering the Oil Water Separators included oil and water wastes from building and floor drains (Units 1 and 2), the fuel oil tank areas, and storm water runoff. Analysis of the individual waste streams were found in the documents reviewed. The Oil water Separator operated under a County permit (California Administrative Code, Title 23, Chapter 3, Subchapter 16, Underground Tank Regulations) until 1996 when system modifications were made and a NPDES permit was issued.

Closure activities at the Oil Water Separator Units were completed on March 21, 1997. Following decontamination of the floor and walls of each separator bed, soil samples were collected beneath and adjacent to the concrete structure and analyzed for components of the wastes in accordance with the approved *Work Plan* to evaluate the completeness of closure activities. Metals and TPH concentrations in soil were consistent with background concentrations in soils collected around the plant, except for an area just outside of the northwest corner of the Unit 1 (outside of the HBRP boundary) waste oil sump where TPH contaminated soil was found and removed (Kintr Environmental, Inc., 1997). On October 2, 1997 the DTSC issued a "clean closure" approval for the Oil Water Separators.

Section 3.3.1.8 Former Sand Blast and Paint Area

Prior to 1992, when the new sand blast/paint facility became operational, blasting and painting operations were conducted outside in temporary structures (See Photos C-1 through C-2 located in Appendix D) just south of the surface impoundment ponds (See Aerial Photo B-4). The soil around the outside facility was sampled and analyzed for hazardous constituents. The results indicated that lead exceeded regulatory limits. The area of the Former Sand Blast location was scraped to remove approximately 1 foot of material



through an 80 foot by 80 foot area around the location. The blast material was removed and shipped to a Class I disposal facility in Kettleman Hills, California, in December, 1990.

Since that time HBPP began using a small enclosure at the site for blasting equipment known to have lead-containing coatings. Equipment that did not have lead-containing coating continued to be blasted outside the containment structure until the new blast facility became operational in 1992. On two occasions since the cleanup in 1990 the lead concentration of samples of blasting materials exceeded the regulatory limits for lead, and the material was removed and shipped to a disposal facility.

Following the last removal of sand from the area (September 1993), the soil was characterized by obtaining a total of 20 individual soil samples from ten locations within the area. The samples were analyzed for total lead concentrations and for California State WET concentration. The analyses indicated that none of the sample locations had either total or WET lead concentrations exceeding the applicable regulatory limit (PG&E, 1993).

Section 3.3.2 Area B

As illustrated in Figure 3 Area B is located along the western boundary of the HBPP. Based on interviews and aerial photos this area was used as a public recreational park area. The park consisted of several picnic tables, open grass area, restrooms, and a parking lot. (See Aerial Photo B-5) Because of problems with homeless visitors, the area was closed and the facilities were removed sometime between 1996 and 1998.

Section 3.3.3 Area C

As illustrated in Figure 3, Area C is located along the south western boundary of the HBPP. Based on interviews and aerial photos this area was used as an unpaved public parking area. (See Aerial Photo B-6)



SECTION 4

RECORDS REVIEW

The data collection team (Mr. Chip Poalinelli – E2 Consulting Engineers Inc. and Mr. Drew Squyres – PG&E) reviewed reports, files, photos, aerial photos, and drawings located at the HBPP. The following is a list of documents that were reviewed and are applicable to the HBRP Environmental Site Assessment.

Documents Reviewed

Cal/EPA Department of Toxic Substances Control, **Letter from Michael James Regarding SWMU 2 – Asbestos-Cement Board Fill**, December 22, 1989.

Cal/EPA Department of Toxic Substances Control, **Closure Clarification Report Approval and Release from Financial Responsibility for Pacific Gas and Electric Company Humboldt Bay Power Plant, EPA I.D. No. CAT 080011562**, October 2, 1997.

Cal/EPA Department of Toxic Substances Control, **Clarification of Status of Federal and State Hazardous Waste Facility Permits for Pacific Gas and Electric Company Humboldt Bay Power Plant, EPA I.D. No. CAT 080011562**, October 15, 1997.

Cal/EPA Department of Toxic Substances Control, **Letter from Michael James-Comments on Two Solid Waste Management Units (SWMU) Assessments**, December 22, 1989.

California Regional Water Quality Control Board. **PG&E Humboldt Bay Power Plant – Letter From Peter Rigney**, August 5, 1993.

California Regional Water Quality Control Board. **Oil Diesel Spill PG&E Humboldt Bay Power Plant – Letter from Richard Azevedo**, October 6, 1993.

California Regional Water Quality Control Board – North Coast Region, **Revision of Order No. 95-22 Waste Discharge Requirements**, 1997.

Coastal Development Permit Application for the Humboldt Bay Independent Spent Fuel Storage Installation, January 14, 2005.

Howe, H. **PG&E Letter to W. Wilson, EPA, Concerning Hazardous Waste Permit Application Part A, Humboldt Bay Power Plant**, October 29, 1981.

Kintr Environmental, Inc., **Closure Certification Report – Surface Impoundments and Hazardous Waste Storage Building**, February, 1972.



Kintr Environmental, Inc., **Closure Certification Report – Closure of Hazardous Waste Units – Oil Water Separators**, June, 1997.

Mittelhauser Corporation. **PG&E – Humboldt Bay Power Plant RCRA Hazardous Waste Part B Permit**, November 8, 1985.

Nelson, T. **PG&E Humboldt Bay Power Plant – Trouble Memorandum No. 90-04**, October 17, 1990.

PG&E. **Distillate Fuel Oil Leak at HBPP**, February 19, 1986.

PG&E. **Report - Presence of Distillate Fuel Oil in Soils at HBPP**, March 14, 1986.

PG&E. **Five Day Report – NPDES System Upset and Accidental Release HBPP – NPDES Permit No. CA0005622**, December 27, 1990.

PG&E. **Five Day Report – NPDES System Upset and Accidental Release HBPP – NPDES Permit No. CA080011562**, December 27, 1990.

PG&E. **Five Day Report – NPDES System Upset and Accidental Release of Oil HBPP – EPA ID No. CAT080011562**, October 30, 1992.

PG&E. **Presence of Distillate Fuel Oil in Soils at HBPP – Letter from Peter Rigney**, August 25, 1993.

PG&E. **Disposition of Waste Blasting Materials at Humboldt Bay Power Plant – Letter to Benjamin Kor (CRWQCB)**, October 19, 1993.

PG&E. **Five Day Report – NPDES System Upset and Accidental Release of Oil HBPP – EPA ID No. CAT080011562 NPDES No. CA0005622**, January 28, 1994.

PG&E. **Five Day Report – Accidental Release of Boiler Water Drains HBPP – NPDES Permit No. CA0005622**, April 14, 2000.

PG&E. **Humboldt Bay Power Plant Technical Review Group – Minutes of a Meeting – Low Volume Waste Sump Overflow Units 1 & 2**, April 20, 2000.

PG&E. **Follow Up Report – Accidental Release of Boiler Water Drains HBPP – NPDES Permit No. CA0005622**, May 4, 2000.

PG&E. **Final Safety Analysis Report Update – Revision 0**, January 2006.

SAIC. **RCRA Facility Assessment of Solid Waste Management Units-Pacific Gas and Electric Company-Humboldt Bay Power Plant**, September 12, 1986.



Weeks, E. *PG&E Letter to California RWQCB, Concerning Release of Low Volume Waste from Humboldt Bay Power Plant*, April 16, 1980.



1900 Powell Avenue, Suite 250
Emeryville, CA 94608
510-428-4728

SECTION 5

INTERVIEWS

As a part of the Phase I Environmental Site Assessment, key PG&E staff (current and retired) were interviewed to help identify and clarify the prior and current uses and conditions of the property. The following is a list of the personnel that were interviewed.

- Greg Bierbaum – PG&E
- Jim Crow – PG&E
- Steve Falk-Carlson – PG&E
- Mike Grossman – PG&E
- LeRoy Marsh – PG&E
- Craig Mitchell – PG&E
- John Paul - PG&E
- Larry Pulley – PG&E
- Steve Schlerf – PG&E
- Mark Smith – PG&E
- Dave Suchar – PG&E
- Terry Williams – PG&E
- Randy Parker – PG&E Retired



Section 6.1 Methodology

A visual survey of the future HBRP was conducted as a part of the data collection effort for the Phase I Environmental Site Assessment. The purpose of the visual survey was to collect information about the uses and conditions (such as ground scaring, stressed vegetation, or chemical residue) of the property and identify areas that warrant further investigations. The visual survey was also used to enhance, augment, or confirm the archival data and, in some cases, to provide new data.

The visual reconnaissance was conducted July 11-13, 2006 and was limited to surface inspections only. There were no intrusive activities, environmental sampling, structural inspections, nor utility inspections conducted.

Section 6.2 General Site Setting

The PG&E user-owned land around the future HBRP site is zoned Coastal-Dependent Industrial. The areas immediately south and east of the site are zoned Waterfront Commercial. The community of King Salmon, located immediately southwest of the site, is zoned Low-Density Residential.

Section 6.3 Observations

The following Sections provide observations of the site survey conducted by Mr. Chip Poalinelli – E2 Consulting Engineers Inc. and Mr. Drew Squyres – PG&E (data collection team).

Section 6.3.1 Area A

Section 6.3.1.1 Former Drum Storage Area

Facility personnel indicated that they had heard of a drum storage area but the exact location of the former storage area was not known. They indicated that this area may have been identified for purposes of the Part A notification. Prior to construction of the existing hazardous waste storage building, there were no designated areas for storing hazardous waste (SAIC, 1986). Because there is no documentation available that provides the location of the Former Drum Storage Area, this area was not visually surveyed by the team.



Section 6.3.1.2 Mobile Gas Turbine Units

The data collection team conducted a visual survey of the two Mobile Turbine Units on July 12, 2006 (See Figure 7). The field team conducted the survey by walking the perimeter of the area. The visual survey observed the two units and the above ground storage tanks. The adjacent areas were grass and paved areas

Section 6.3.1.3 Fuel Line Leak

The data collection team conducted a visual survey of the Fuel Leak Area on July 12, 2006 (See Figure 7). The field team conducted the survey by walking the perimeter of the area. The area was paved with asphalt.

Section 6.3.1.4 Oil Water Separator

The Oil Water Separators are outside of the site but were evaluated for the potential impact on the adjacent future location of the HBRP. The area was paved and includes potential areas down-gradient discussed in the Area Southeast of Unit 3.

Section 6.3.1.5 Former Sandblast and Paint Area (1)

The data collection team conducted a visual survey of the Former Sandblast and Paint Area on July 12, 2006 (See Figure 7). The field team conducted the survey by walking the perimeter of the area. The visual survey observed the new Sandblast Building and the area behind the building, which were the Former Sandblast and Paint Area (See Photos C-3 and C-4). The data collection team observed buildings surrounded by grass areas.

Section 6.3.1.6 Former Sandblast and Paint Area (2)

The data collection team conducted a visual survey of the Former Sandblast and Paint Area on July 12, 2006 (See Figure 7). The field team conducted the survey by walking the perimeter of the area. The visual survey observed that the Former Sandblast and Paint Area (2) are located just outside of the proposed HBRP western boundary at the southern edge of the Discharge Channel. The site is paved and is located at the base of a slight elevation to the north creating a migration pathway onto the future site of the HBRP. Based on interviews, this area was used to conduct outside sandblasting and painting activities (See Photos C-5 and C-6). Observations of the data collection team include structures (assumed to be used as related activities), paved roads, and grass areas along the outlet channel.

Section 6.3.1.7 Asbestos Burial Area

The data collection team conducted a visual survey of the Asbestos Burial Area on July 12, 2006. The field team conducted the survey by walking the western perimeter of the area (See Figure 7). The visual survey observed that the area is covered with vegetation and the SWMU warning signs are in poor condition (See Photo C-7 through C-9). As noted in



Section 3, this area has been addressed through the RCRA process and is in a location that will not be impacted by the future HBRP.

Section 6.3.1.8 Switchyard

The data collection team conducted a visual survey of the 60 KV Switchyard on July 12, 2006. The field team conducted the survey by walking the perimeter of the area (See Figure 7). The Switchyard is surrounded by a concrete berm with a gravel floor and reportedly contained units housing PCB oils (See Photos C-10). The area is surrounded by paved and grass areas.

Section 6.3.1.9 Surface Impoundments

The data collection team conducted a visual survey of the Surface Impoundments on July 12, 2006 (See Figure 8). The field team conducted the survey by walking the perimeter of the area (See Photo C-11 and C-12). As noted in Section 3, this area has been addressed through the RCRA process and is in a location that will not be impacted by the future HBRP (See Section 3). The area is surrounded by grass areas, the Former Training Area, the Asbestos Burial Area.

Section 6.3.1.10 Former Fire Training Area and Soil/Seaweed Fill Area

The data collection team conducted a visual survey of the northern part of Area A on July 12, 2006 (See Figure 7). This area was reported to be where fire training activities were conducted, seaweed from the intake channel was dumped, and used as a fill area for soils removed from the plant (including dredge material from the intake and discharge channels) (See Photos C-13 and C-14). This area consists of grass areas.

Section 6.3.1.11 North Fill Area

The data collection team conducted a visual survey of the northern part of Area A on July 12, 2006 (See Figure 7). This area was reported to be used as a fill area for soils removed from the plant (See Photos C-15 and C-16). This area consists of grass areas.

Section 6.3.1.12 Power Pole Area Behind the New Sandblast Building

The data collection team conducted a visual survey of the New Sandblast Building (See Figure 7). During the site visit, stressed vegetation adjacent to a power pole was observed (See Photo C-17 and C-18).



Section 6.3.1.13 Area Southeast of the Intake Channel

The data collection team conducted a visual survey of the area southeast along the Intake Channel (See Figure 7), which will be the future access road to the HBRP. The area is relatively flat with abundant vegetation (grass, bushes, and tress) (See Photos C-19 and C-20). The area drains into wetlands and Buhne Creek east of the side.

Section 6.3.1.14 Area Southeast of Unit 3

The data collection team conducted a visual survey of the area Southeast of Unit 3 (See Figure 8), which will be the future HBRP. The area is relatively flat paved area with vegetation (grass and tress) around several structures including the new Sandblast Building, the Radiation Protection Department Decom Projects Trailer, the 5-Trailer Office Complex, MEPP Control Building, Storage Buildings, CB 132, MEPP Oil Shed, Warehouse C-Vans, Paint Materials C-Van, Hazardous Waste Storage, Effluent Pond Storage Trailer, MEPP Diesel Tanks, and the 60 KV Switchyard (See Photos C-21 and C-22). The field team conducted the survey by walking the perimeter of the area. The previous or current use of the structures, the type's materials stored, and estimated storage quantities are summarized in Table 1.

Section 6.3.2 Area B

The data collection team conducted a visual survey of Area B on July 12, 2006 (See Figure 3). The field team conducted the survey by walking the perimeter of the area, then walking a transect of the area. The visual survey confirmed that the previous use of the area was a recreational park and parking. The picnic tables and the restroom have been removed but the area remains flat with grass, trees, and bush vegetation (See Photo C-23). The cement slabs from the former restroom are still present at the park area (See Photo C-24). The parking area adjacent to the park is flat with a gravel surface that has become over grown with vegetation (See Photo C-25).

Section 6.3.3 Area C

The data collection team representative conducted a visual survey of Area C on July 12, 2006 (See Figure 3). The field team conducted the survey by walking the perimeter of the area, then walking an transect of the area. The visual survey confirmed that the previous use of the area was parking. The parking area currently has a locked cattle gate and several parked cars and boats. The parking area is flat with a gravel surface that has some vegetation growth.



SECTION 7 FINDINGS AND CONCLUSIONS

Base on the data collected during the Phase I Environmental Site Assessment the following areas have insufficient data to assess environmental impact or are Areas of Recognized Environmental Conditions that should be considered for a Phase II Environmental Assessment or considered for engineering controls based on future reuse/construction:

- Former Drum Storage Area;
- Areas around the Former Fire Training Area and Soil/Seaweed Fill Area;
- Former Sandblast and Paint Area (1);
- Former Sandblast and Paint Area (2);
- Areas down-gradient of the Switchyard;
- Areas down-gradient (within the project construction zone) of the North Fill Area;
- Areas around the Power Pole Behind the New Sandblast Building; and
- Areas East of Unit 3 (Excluding potential radiological environmental impacts).

The following areas that were evaluated during the Phase I Environmental Site Assessment were either previously addressed through the RCRA process or information reviewed didn't indicate activities that would have resulted in Recognized Environmental Conditions:

- Mobile Gas Turbine Units;
- Fuel Line Leak (DTSC Remedial Action Approval);
- Oil Water Separators (RCRA Clean Closure);
- Asbestos Burial Area (RCRA Clean Closure);
- Surface Impoundments (RCRA Clean Closure);
- Areas Southeast of the Intake Channel;
- Hazardous Waste Storage Building (RCRA Clean Closure);
- Area B; and
- Area C.

Findings and conclusions for areas evaluated as a part of this Phase I Environmental Site Assessment are summarized in the following sections.



Section 7.1 Area A

Section 7.1.1 Former Drum Storage Area

Past releases from this unit cannot be evaluated due to the lack of information on the Former Drum Storage Area. Based on the location description, southwest of the Oil Waste Separators in the vicinity of the fireside waste bin, it is probable that the former location of the Drum Storage Area is west of the boundary of the future HBRP. There is insufficient information to determine if there are Recognized Environmental Conditions that could result in risk to human health and the environment.

Section 7.1.2 Mobile Gas Turbine Units

Based on interviews and available records there has not been a release from the Mobile Gas Turbine Units that would have resulted in a risk to human health and the environment.

Section 7.1.3 Fuel Line Leak

Based on the remedial actions (conducted in 1986), visual survey, and future reuse (industrial), conditions of the area of the Fuel Line Leak do not pose a threat to human health and the environment. As specified in the CRWQCB letter dated October 6, 1993, this area requires no further action.

Section 7.1.4 Oil Water Separators

PG&E has been conducting groundwater monitoring around the Oil Water Separators since 1988. The monitoring results have not shown any indication of groundwater contamination. Thus, the data supports the conclusion that operation of the Oil Water Separators has not affected neighboring soils (Kintr Environmental, 1997). A risk evaluation of the results was completed in accordance with state and federal guidance, and concluded that the concentration of metals reported in the soils do not pose a significant risk and no further action is needed to protect human health and the environment. On October 2, 1997 the DTSC issued a "clean closure" approval for the Oil Water Separators.

Section 7.1.5 Former Sandblast and Paint Area (1)

Based on the previous use (former Sandblast Area of lead-based paint materials) and future reuse (HBRP), conditions in the area do not pose a threat to human health and the environment based lead concentration in soils. However, lead-based paint is also known to contain elevated concentrations of other metals (e.g., zinc). There is information supporting Recognized Environmental Conditions that could (based on land use) result in risk to human health and the environment.



Section 7.1.6 Former Sandblast and Paint Area (2)

Past releases from this unit cannot be evaluated due to the lack of information of the area. The Historic Sandblast and Paint Area are not within the boundary of the HBRP but the topography of the area is up gradient of the surface flow to the future site of the HBRP. There is information supporting Recognized Environmental Conditions that could (based on land use) result in risk to human health and the environment.

Section 7.1.7 Asbestos Burial Area

The asbestos fibers are non-friable therefore not hazardous (unless disturbed by intrusive activities). PG&E has instituted internal restrictions to prevent disturbance of the asbestos-cement pieces; and will in the event of a property transfer notify the potential buyer of the hazardous (if disturbed) constituent on the site. This area has been closed (with institutional controls) through the RCRA process as approved by California Department of Toxics Substance Control. Therefore, the environment and the public health will be protected as long as the soils are not disturbed (Cal/EPA, December 1989).

Section 7.1.8 Switchyard

Past releases from this unit cannot be evaluated due to the lack of information of the area. The Switchyard is not within the boundary of the HBRP but the topography of the area is up gradient of the surface flow to the future site of the HBRP. There is insufficient information to determine if there are Recognized Environmental Conditions that could (based on land use) result in risk to human health and the environment at down gradient locations (See Figure 7).

Section 7.1.9 Surface Impoundments

Metals concentrations in the perimeter soil borings were found to resemble background concentrations, indicating that operation of the impoundments has not affected adjacent areas. A risk evaluation of the results was completed in accordance with state and federal guidance, and concluded that the metals concentrations in soil and liner wipe samples did not pose a significant risk and were protective of human health and the environment (Kintr Environmental, Inc., 1997).

Verification sample results indicated that the concentrations of metals found in soils associated with the wastewater pipeline do not pose a significant risk to human health or the environment (Kintr Environmental, Inc., 1997).

The area around the surface impoundments have been addressed ("Clean Closed") through the RCRA process as approved by California Department of Toxics Substance Control and the California Regional Water Quality Control Board (Order No. 98-18).



Section 7.1.10 Former Fire Training Area and Soil/Seaweed Fill Area

Past releases from this unit cannot be evaluated due to the lack of information on the Former Fire Training Area and Soil/Seaweed Fill Area. There is information supporting Recognized Environmental Conditions that could (based on land use) result in risk to human health and the environment.

Section 7.1.11 North Fill Area

Past releases from this unit cannot be evaluated due to the lack of information of the area. The North Fill Area is not within the boundary of the HBRP but the topography of the area is up gradient of the surface flow to the future site of the HBRP. There is information supporting Recognized Environmental Conditions that could (based on land use) result in risk to human health and the environment.

Section 7.1.12 Power Pole Area Behind the New Sandblast Building

The stained pole and stressed vegetation seems to be limited to the preservation of the power pole. However, soils around the area should be investigated based on stressed vegetation and discoloration of the pole.

Section 7.1.13 Area Southeast of the Intake Channel

Based on the interviews and historical records, there is not information supporting Recognized Environmental Conditions that could result in risk to human health and the environment.

Section 7.1.14 Area East of Unit 3

Based on the interviews (See Section 5) and records reviewed (See Section 4) there have no reported spills or dumping (other than noted in this report) associated with operations at these structures. The survey did not include a drain investigation, environmental sampling, or interior inspections. Therefore, there is not information to identify Recognized Environmental Conditions that could result in risk to human health and the environment.

In addition to this Phase I Environmental Site Assessment, additional data will be collected as a part of the Humboldt Bay Power Plant MARSIMM evaluation that will specifically address potential radiological environmental impacts.



Section 7.1.15 Hazardous Waste Storage Building (HWSB)

Closure activities at the HWSB were completed on October 17, 1996. The hazardous waste drums were moved to the concrete-bermed pad, the building floor and lower walls were decontaminated, and the liquid from the decontamination activity was tested and discharged through the plants oil water separator system in accordance with the NPDES permit. Metal concentrations in the soil were found to resemble background concentrations in soils collected around the plant, indicating that operation of the HWSB has not affected neighboring soil. A risk evaluation of the results was completed in accordance with state and federal guidance, and concluded that the metals reported in the soil do not pose a significant risk and are protective of human health and the environment. (Kintr Environmental, Inc., 1997) On October 2, 1997 PG&E received closure certification approval from the DTSC approving "clean closure" of the HWSB.

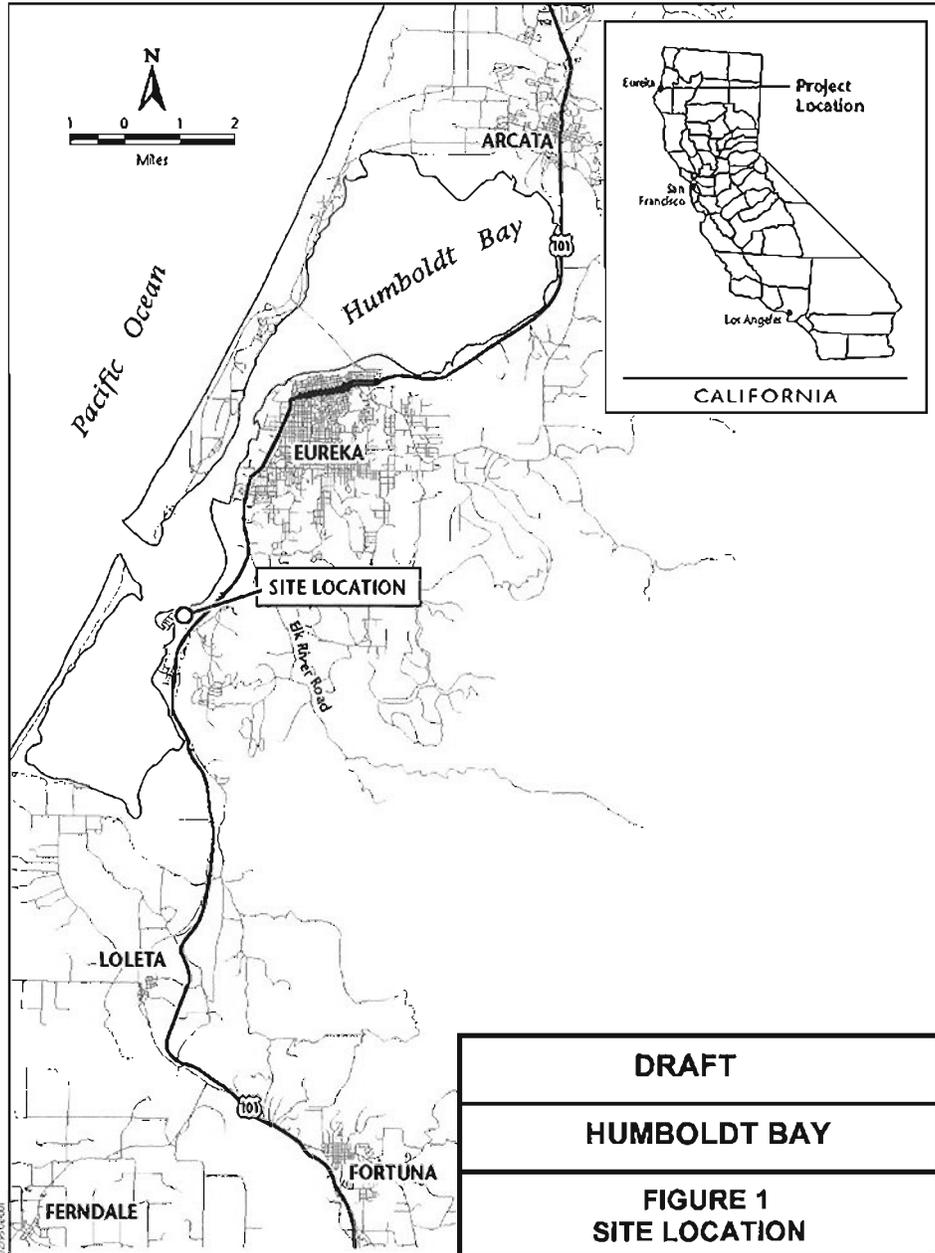
Section 7.2 Area B

Based on the previous uses (recreational park), visual survey, and future reuse (parking), conditions at Area B, there are not information supporting Recognized Environmental Conditions that could result in risk to human health and the environment.

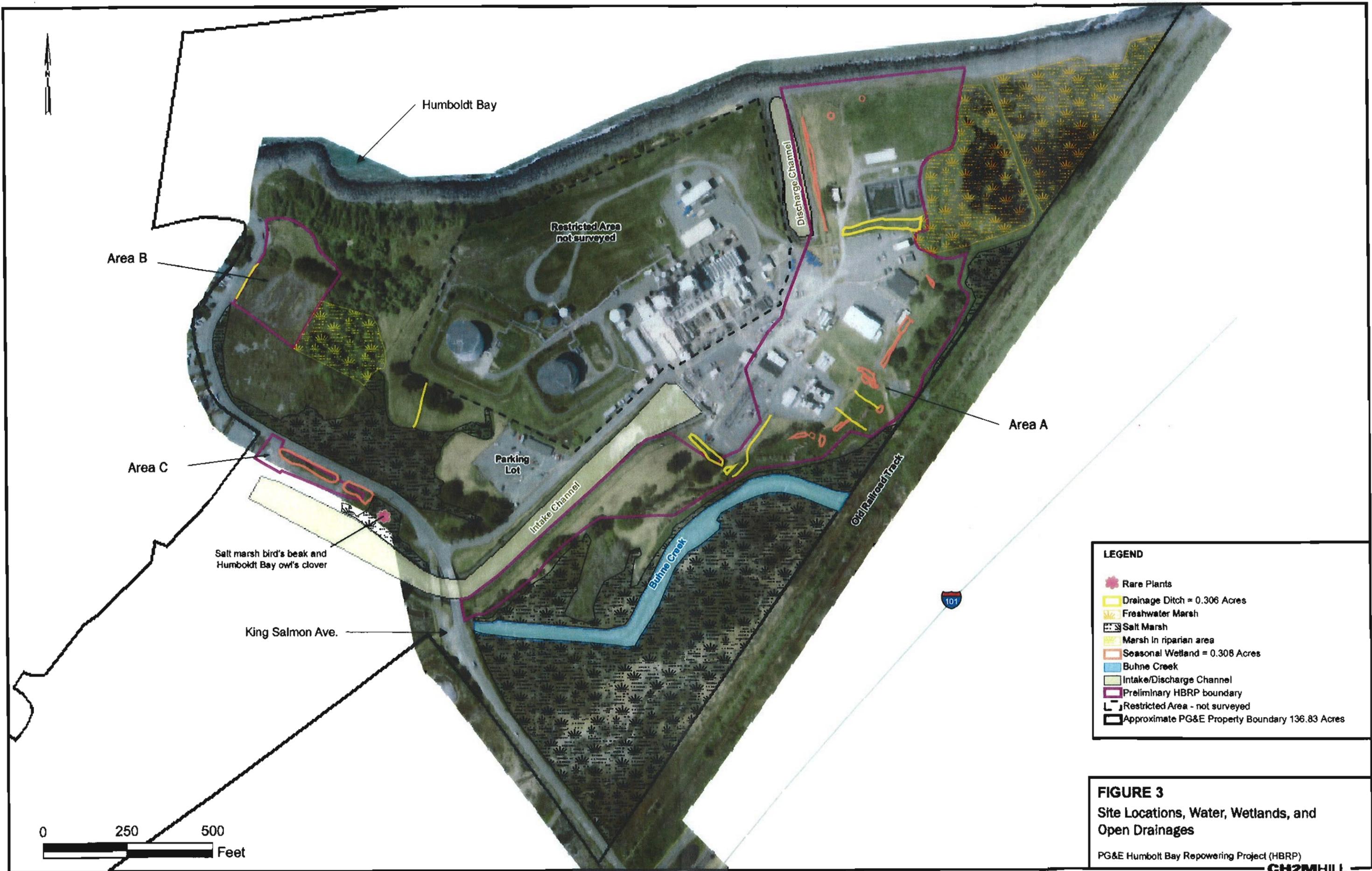
Section 7.3 Area C

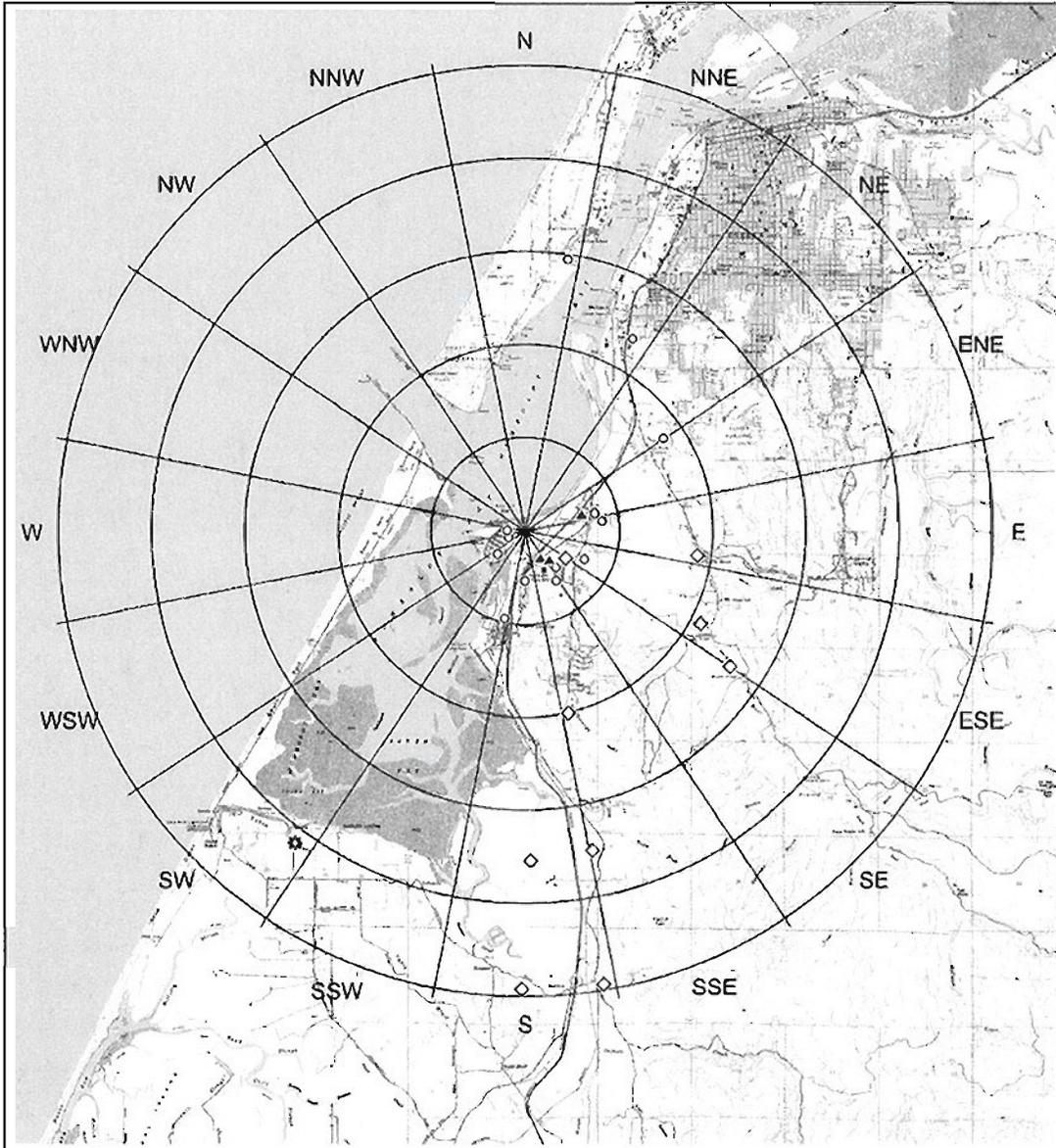
Based on the previous uses (recreational park), visual survey, and future reuse (parking), conditions at Area C, there are not information supporting Recognized Environmental Conditions that could result in risk to human health and the environment.





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LEGEND

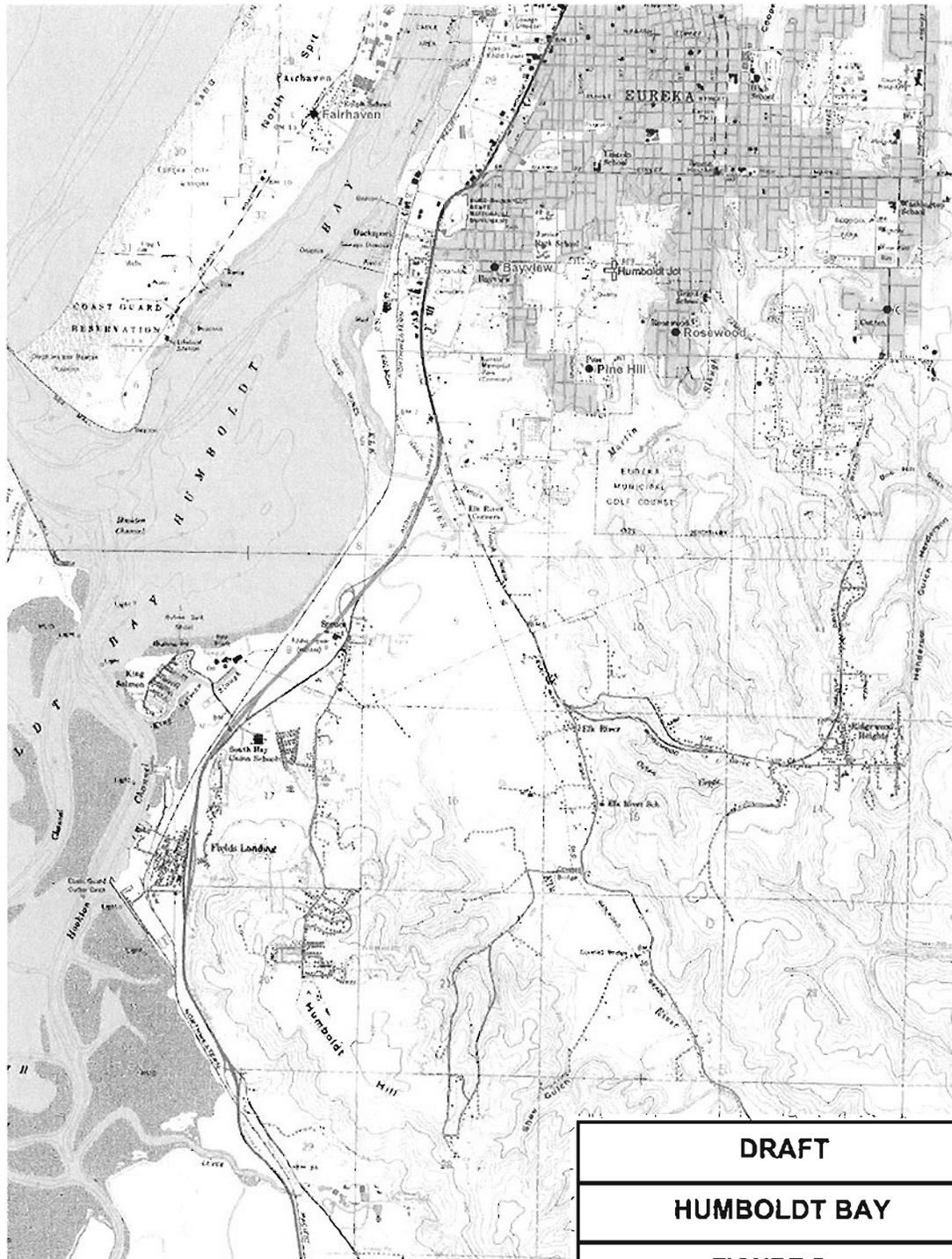
- Nearest Residence
- ◇ Farm or Ranch
- ▲ Groundwater Well
- ✱ Community Garden



Base Map: USGS 7.5' series California quadrangles:
Arcata South, Cannibal Island, Eureka,
and Fields Landing

DRAFT
HUMBOLDT BAY
FIGURE 4
GROUNDWATER WELLS

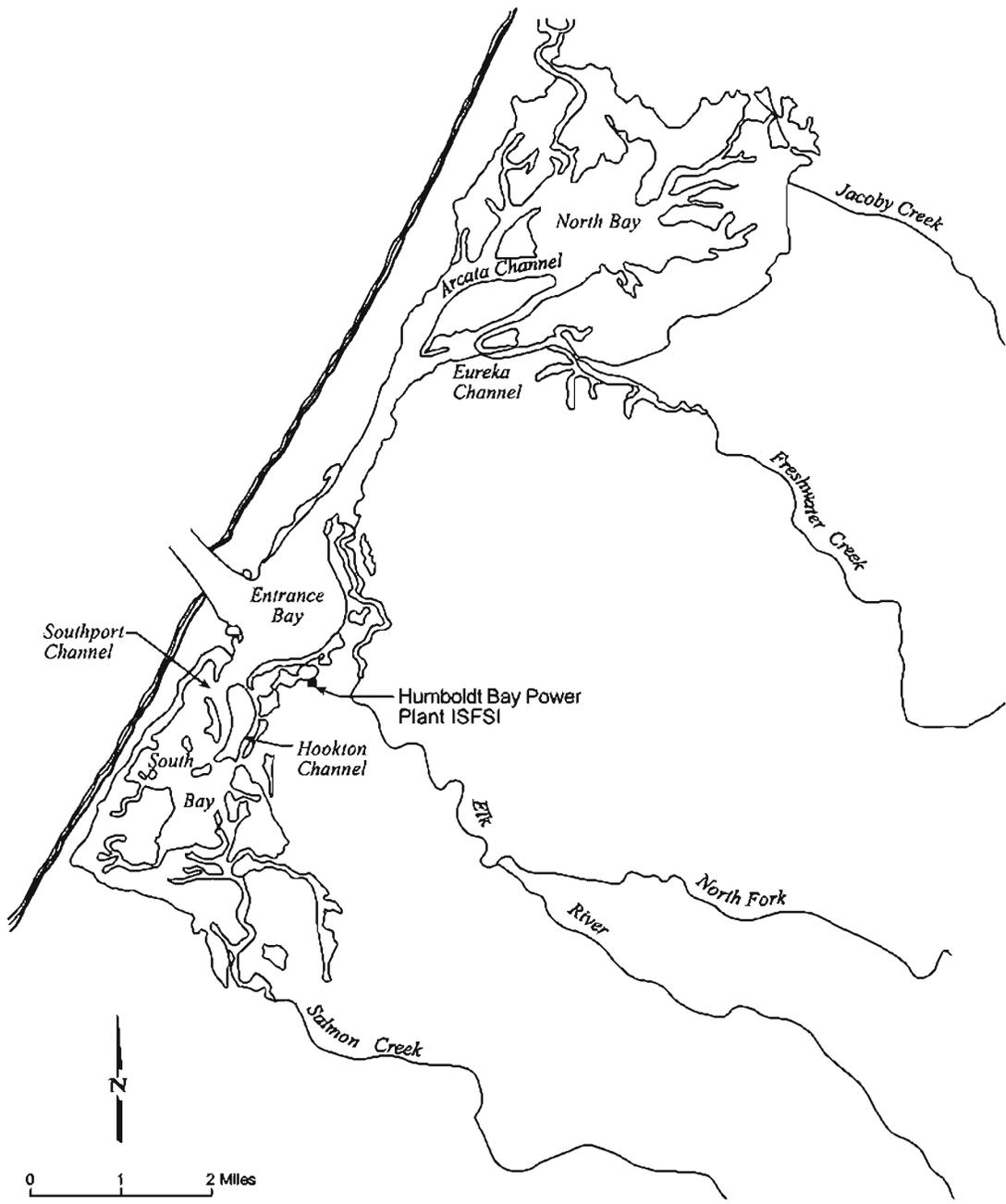
Revision 0 January 2006



----- 1 mile -----

DRAFT
HUMBOLDT BAY
FIGURE 5 TOPOGRAPHIC FEATURES

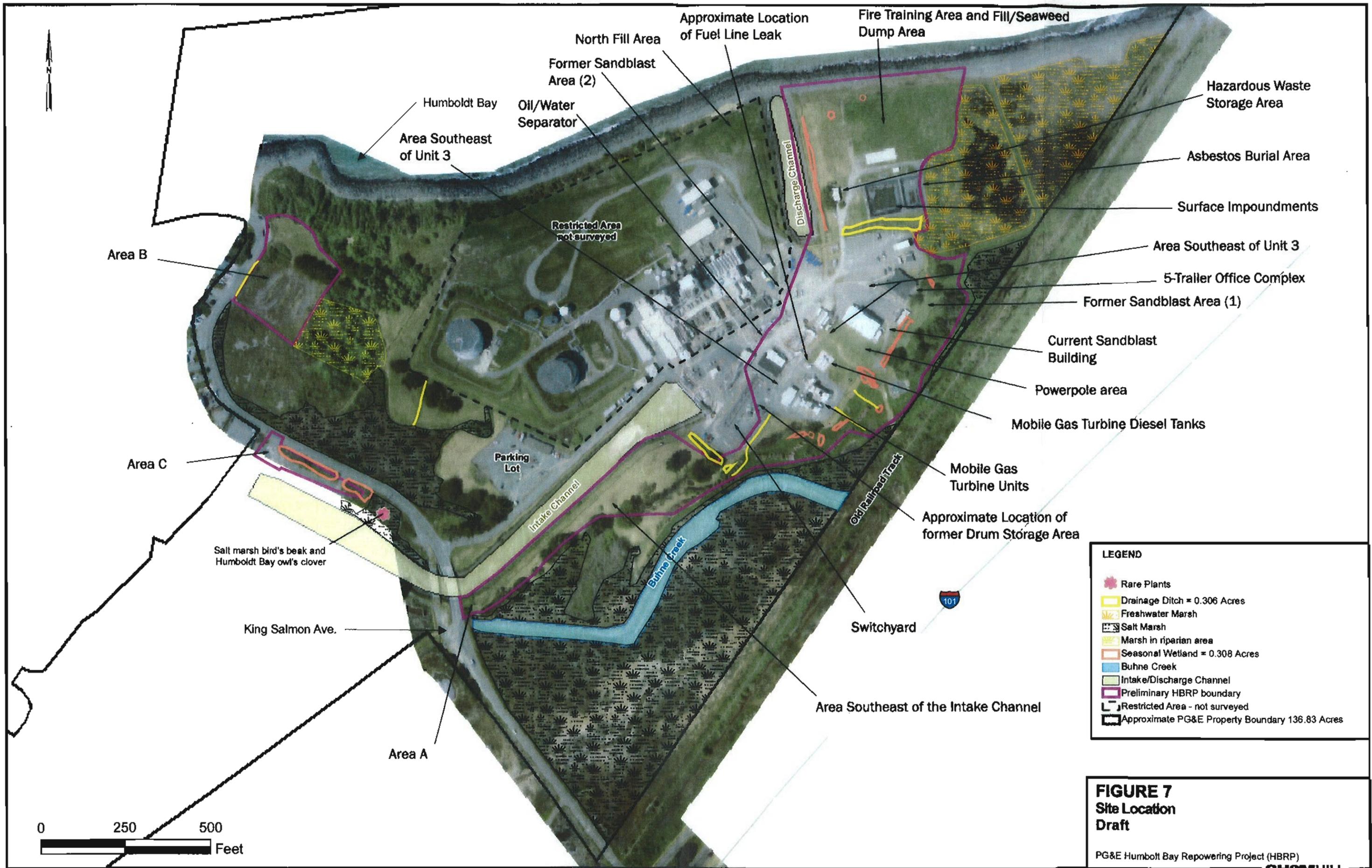
Revision 0 January 2006



 Mudflats

DRAFT
HUMBOLDT BAY
FIGURE 6 WATERSHEDS OF HUMBOLDT BAY

Revision 0 January 2006

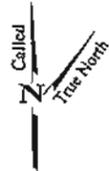
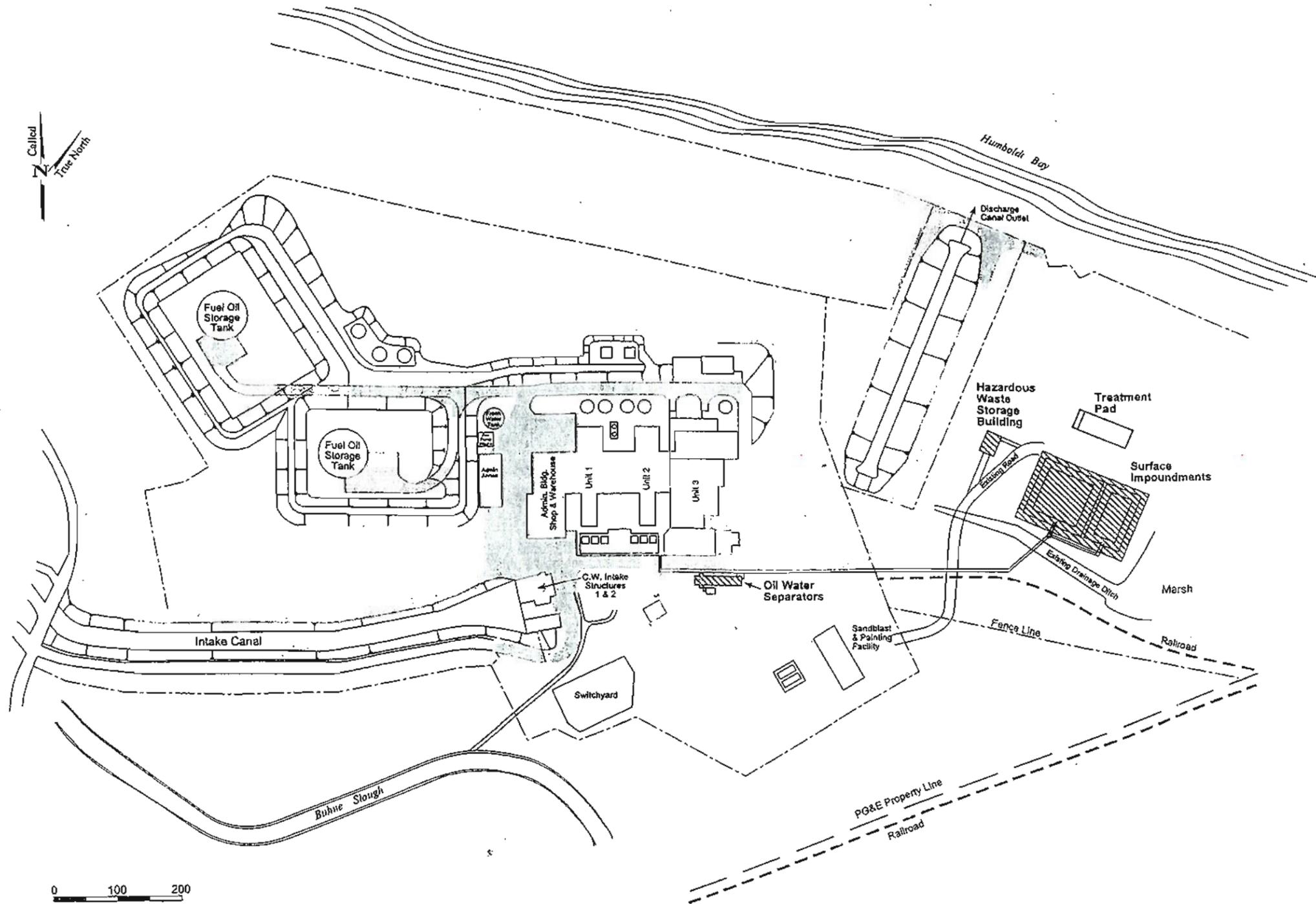


LEGEND

- Rare Plants
- Drainage Ditch = 0.306 Acres
- Freshwater Marsh
- Salt Marsh
- Marsh in riparian area
- Seasonal Wetland = 0.308 Acres
- Buhne Creek
- Intake/Discharge Channel
- Preliminary HBRP boundary
- Restricted Area - not surveyed
- Approximate PG&E Property Boundary 136.83 Acres

FIGURE 7
Site Location
Draft

PG&E Humboldt Bay Repowering Project (HBRP)
CH2MHILL



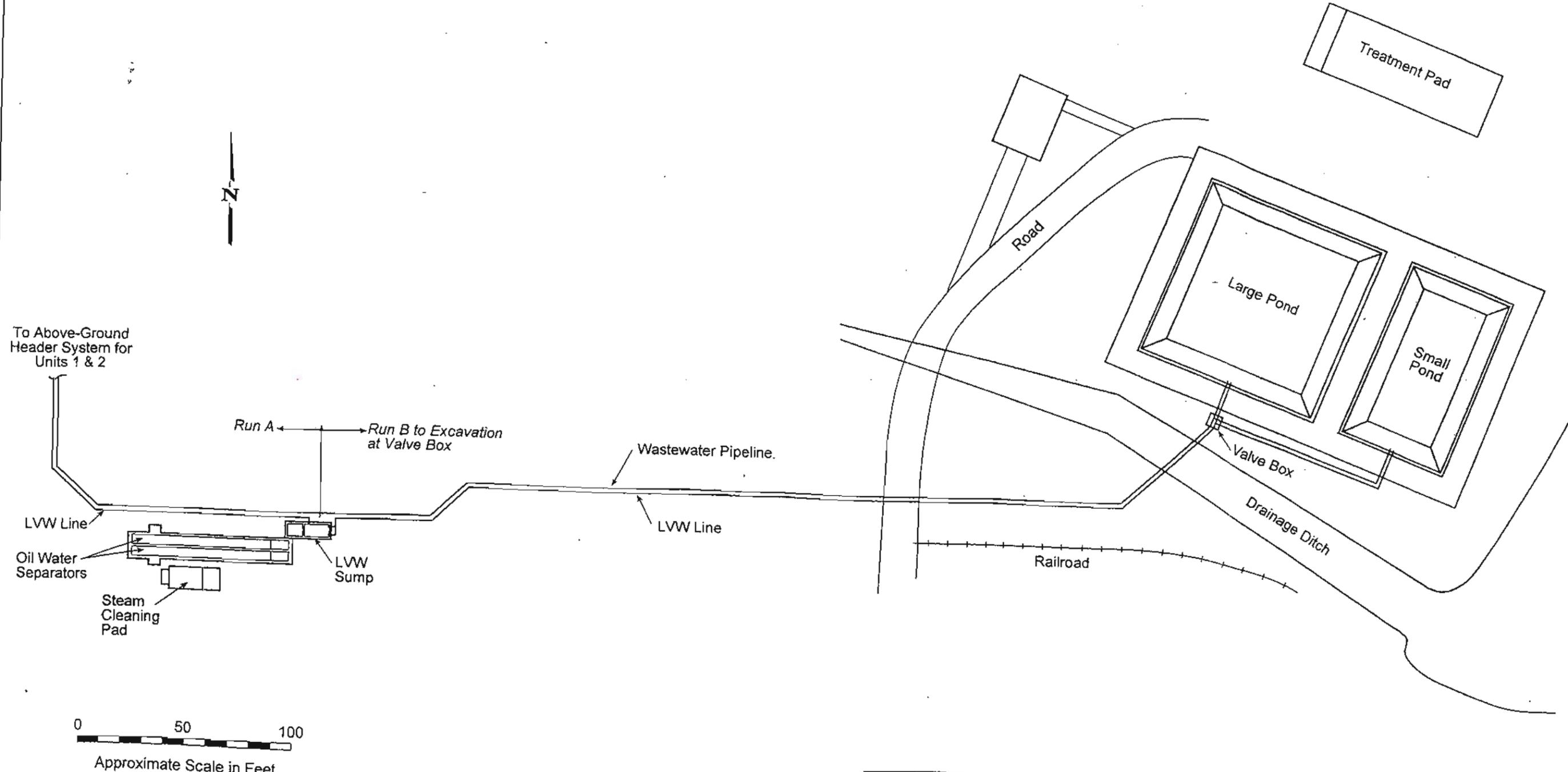
0 100 200
Approximate Scale in Feet

Site Plan
Closure of Hazardous Waste Units

Kintr Environmental, Inc. Pacific Gas and Electric Company
Project No. 9602 6/30/97 Humboldt Bay Power Plant

Figure: 5

960235/fig-3/pc19



Surface Impoundments and Wastewater Pipeline
 Closure of Hazardous Waste Units

Kintr Environmental, Inc.
 Project No. 9602 2/10/97

Pacific Gas and Electric Company
 Humboldt Bay Power Plant

Figure: 9

Table 1
Humboldt Bay Power Plant
Activities/Materials in Proximity of Proposed New Power Plant

	STRUCTURE	ACTIVITIES	MATERIALS
			Typical Max Quantities
1	MEPP Control Bldg	Control Room, Minor service of air receivers and diesel-fired emergency generator	400 gal Dble-walled diesel tank
2	Storage Bldg	Storage	No Haz. Material
3	Storage Bldg	Storage	No Haz. Material
	CB 132	Switching	SF6 Breakers
4	MEPPS Oil Shed	Storage	200 gal misc. oils 200 gal gasoline 100 gal flam. Solvents
5,6	Warehouse C-Vans	Storage of equipment	No Haz. Material
7	Paint Materials C-Vans	Storage of materials and equipment	1000 gal latex, oil, epoxy paints, solvents, insulating coatings
8	Haz. Waste Storage	Interim storage of wastes, prior to shipment	30 drums of solids including asbestos, oily solids, sandblast sand, paint related wastes. 200 gal misc oils 100 gal flam. solvents 100 gal coolants
9	Effluent Pond Storage Trailer	Storage of materials and equipment	200 gal of liquid sodium hydroxide
10	5-Trailer Bldg.	Office	No Haz. Material
12	MEPP Diesel Tks	Service Tanks	20,000 gal diesel
13	Paint Bldg.	Painting, Sandblasting within confines of booths. Compressed air system, blast booth exhaust filtration.	100 gal paints and solvents 2000 lb of waste blast media 3 drums of waste paint, solvents
14	Switchyard	Switching	5,000 gal insulating oil

APPENDIX A

TITLE RECORDS

1200-80

1404-01-0254

KURKA SHIPBUILDERS, INC., a California corporation, hereby grants
 to PACIFIC GAS AND ELECTRIC COMPANY, a California corporation, that certain
 real property, situate in the County of Humboldt, State of California, de-
 scribed as follows, to-wit:

Beginning at the most easterly corner of Lot 28 of Block 5
 and running thence south $59^{\circ} 17\frac{1}{2}'$ east, along the southwesterly
 boundary line of Block 6, 139.29 feet; thence continuing along
 the southeasterly boundary line of Block 6 south $76^{\circ} 45'$ east
 204.65 feet to the most southerly corner of Lot 66 of Block 6;
 thence north $25^{\circ} 32\frac{1}{2}'$ east, along the southeasterly boundary
 line of Lot 66 of Block 6, 152.81 feet to the center line of
 Salmon Ave.; thence along the center line of Salmon Ave.
 the following courses and distances, namely: north $64^{\circ} 27\frac{1}{2}'$ west
 174.44 feet; thence north $61^{\circ} 07\frac{1}{2}'$ west 281.37 feet to a concrete
 monument; thence north $17^{\circ} 10\frac{1}{2}'$ west 221.80 feet to a concrete
 monument; and thence north $30^{\circ} 59\frac{1}{2}'$ west 386.46 feet to the
 northerly corner of Lot 25 of Block 6; thence north $59^{\circ} 17\frac{1}{2}'$ west
 along the northeasterly boundary line of Lot 25 of Block 6 and
 the northwesterly prolongation thereof, 284.21 feet to a point
 in the northwesterly boundary line of Buhas Drive; thence along
 the northwesterly boundary line of Buhas Drive, south $72^{\circ} 07\frac{1}{2}'$
 west 97.76 feet; and thence south $46^{\circ} 07\frac{1}{2}'$ west 105.94 feet;
 thence leaving the northwesterly boundary line of Buhas Drive
 north 440.00 feet; thence north $76^{\circ} 01\frac{1}{2}'$ east 2632.58 feet;
 thence east 830.00 feet to a point in the northwesterly boundary
 line of the railroad right of way of the Northwestern Pacific
 Railroad Company which bears south $88^{\circ} 28'$ west 1884.73 feet
 distant from an iron pipe with a bronze cap marking the east
 corner of Section 8, Township 4 North, Range 1 West,
 S. & M.; thence south $33^{\circ} 21'$ west, along the northwesterly
 boundary line of said railroad right of way, 3500.00 feet; thence
 leaving the northwesterly boundary line of said railroad right of
 way north $38^{\circ} 09'$ west 860.12 feet to a point from which the most
 southerly corner of Lot 66 of Block 6 bears north $42^{\circ} 50'$ west
 125.85 feet distant; thence south $51^{\circ} 51'$ west 2365 feet, more
 or less, to the southwesterly boundary line of Tide Lands Survey
 No. 102, Humboldt County Surveys; thence along the southwesterly
 boundary line of said Tide Lands Survey No. 102, north $17^{\circ} 30'$
 west 165.00 feet; and thence north $26^{\circ} 15'$ west 785.00 feet;
 thence leaving the southwesterly boundary line of said Tide Lands
 Survey No. 102, easterly 155 feet, more or less, directly to
 the most westerly corner of King Salmon Resort; thence easterly
 and northerly along the southerly and easterly boundary line of
 King Salmon Resort to the most southerly corner of Lot 30 of
 Block 2, said most southerly corner of Lot 30 of Block 2 being
 in the center line of Perch Ave.; thence north $30^{\circ} 42\frac{1}{2}'$ east,
 along the southeasterly boundary line of Lot 30 of Block 2, 145.00
 feet to the most easterly corner of Lot 30 of Block 2; thence
 north $59^{\circ} 17\frac{1}{2}'$ west, along the northeasterly boundary line of
 Lot 30 of Block 2, 50.00 feet to the most northerly corner of
 Lot 30 of Block 2; thence north $30^{\circ} 42\frac{1}{2}'$ east, along the south-
 easterly boundary line of Lot 60 of Block 2 and the northeasterly
 prolongation thereof, 145.00 feet to a point in the northeasterly
 boundary line of Crab Ave.; thence south $59^{\circ} 17\frac{1}{2}'$ east, along
 the northeasterly boundary line of Crab Ave. and the southeasterly

prolongation thereof, 25.04 feet to the southeasterly boundary line of Lot 30 of Block 3; thence north $30^{\circ} 42\frac{1}{2}'$ east, along the southeasterly boundary line of Lot 30 of Block 3, 105.00 feet to a point in the southwesterly boundary line of Lot 60 of Block 3; thence south $59^{\circ} 17\frac{1}{2}'$ east, along the southwesterly boundary line of Lot 60 of Block 3, 25.00 feet to the most/southerly corner of Lot 60 of Block 3; thence north $30^{\circ} 42\frac{1}{2}'$ east, along the southeasterly boundary line of Lot 60 of Block 3 and the northeasterly prolongation thereof, 158.00 feet to a point in the northeasterly boundary line of Cod Ave.; thence south $59^{\circ} 17\frac{1}{2}'$ east, along the northeasterly boundary line of Cod Ave. and the southeasterly prolongation thereof, 50.00 feet to the southeasterly boundary line of Lot 30 of Block 4; thence north $30^{\circ} 42\frac{1}{2}'$ east, along the southeasterly boundary line of Lot 30 of Block 4, 118.00 feet to a point in the southwesterly boundary line of Lot 59 of Block 4; thence south $59^{\circ} 17\frac{1}{2}'$ east, along the southwesterly boundary line of Lot 59 of Block 4, 25.00 feet to the most southerly corner of Lot 59 of Block 4; thence north $30^{\circ} 42\frac{1}{2}'$ east, along the southeasterly boundary line of Lot 59 of Block 4 and the northeasterly prolongation thereof, 158.00 feet to a point in the northeasterly boundary line of Sole Ave.; thence south $59^{\circ} 17\frac{1}{2}'$ east, along the northeasterly boundary line of Sole Ave., 25.00 feet to the southeasterly boundary line of Lot 28 of Block 5; thence north $30^{\circ} 42\frac{1}{2}'$ east, along the southeasterly boundary line of Lot 28 of Block 5, 118.00 feet, more or less, to the point of beginning;

save and excepting therefrom the following parcels of land:

1. That certain parcel of land conveyed to George Cooke and wife by deed dated October 27, 1949 and recorded in the office of the County Recorder of said Humboldt County in Volume 112 of Official Records at page 106;
2. That certain parcel of land conveyed to Gerald L. Coddling and wife by deed dated May 1, 1950 and recorded in the office of said County Recorder in Volume 134 of Official Records at page 45;
3. Lot 22 of Block 6 of King Salmon Resort;
4. Beginning at the southeast corner of the intersection of Buhne Drive and Salmon Ave. and running thence south $30^{\circ} 59' 30''$ west, along the southeasterly boundary line of Salmon Ave., 75 feet; thence south $59^{\circ} 00' 30''$ east 100 feet; thence north $30^{\circ} 59' 30''$ east 75 feet to the southwesterly boundary line of Buhne Drive; thence north $59^{\circ} 00' 30''$ west, along the southwesterly boundary line of Buhne Drive, 100 feet to the point of beginning;
5. Beginning at the most westerly corner of Lot 24 of Block 6 and running thence north $33^{\circ} 45'$ east, along the southeasterly boundary line of Lot 21 of Block 6, 106.63 feet to a point in the center line of Buhne Drive; thence south $72^{\circ} 07\frac{1}{2}'$ west, along the center line of Buhne Drive, 141.99 feet to a point in the northwesterly prolongation of the southwesterly boundary line of Lot 24 of Block 6; thence south $59^{\circ} 17\frac{1}{2}'$ east, along the northwesterly prolongation of the southwesterly boundary line of Lot 24 of Block 6, 88.27 feet, more or less, to the point of beginning;
6. That certain parcel of land conveyed to Hugh D. Gruhn and wife

and designated as Parcel 2 in that certain deed dated March 18, 1949 and recorded in the office of said County Recorder in Volume 94 of Official Records at page 231;

containing a net acreage of 137.0 acres.

Said Lots, Blocks, Aves., and Drive hereinbefore referred to are all delineated and designated upon that certain map of King Salmon Resort filed for record in the office of said County Recorder in Book 12 of Maps at page 57.

IN WITNESS WHEREOF the grantor herein has executed these presents this 8th day of February 1952

EUREKA RHTPBUILDERS, INC.

By L. Mone Call
Its

And by George Coustins
Its Secretary



State of California
County of Humboldt

On this 8th day of February 1952, in the year One Thousand Nine Hundred and Fifty-two before me
M. E. ANDERSON a Notary Public in and for the said County of Humboldt, residing
herein, duly commissioned and sworn, personally appeared LA MONE CALL and GEORGE COUSTINS
known to me to be the President and Secretary of the corporation that executed the within and foregoing
instrument, and to be the persons who executed the said instrument on behalf of said corporation thereto
named, and acknowledged to me that said corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, in the
County of Humboldt this day and year in this certificate first above written.

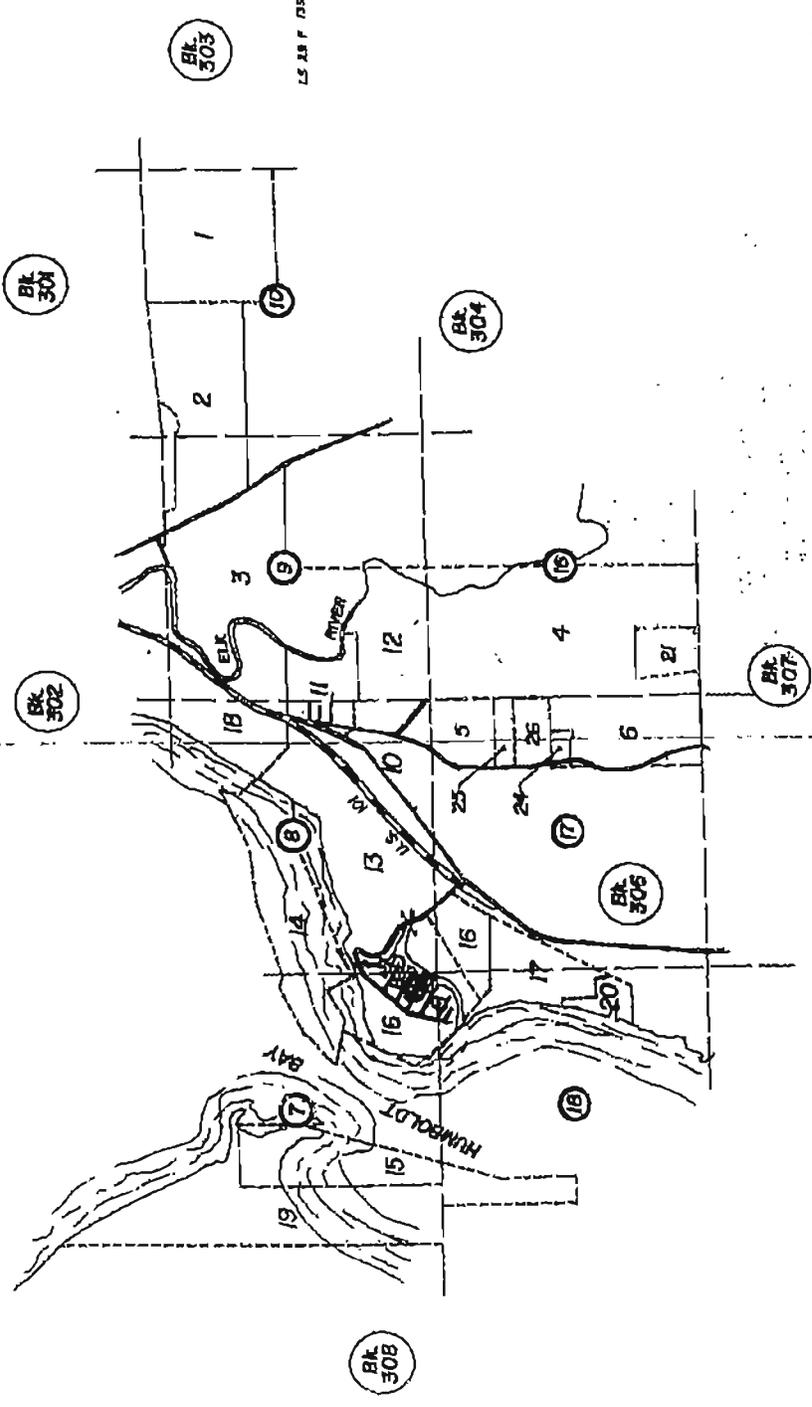
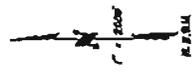
M. E. Anderson

Notary Public in and for the County of Humboldt, State of California
My commission expires May 15, 1955

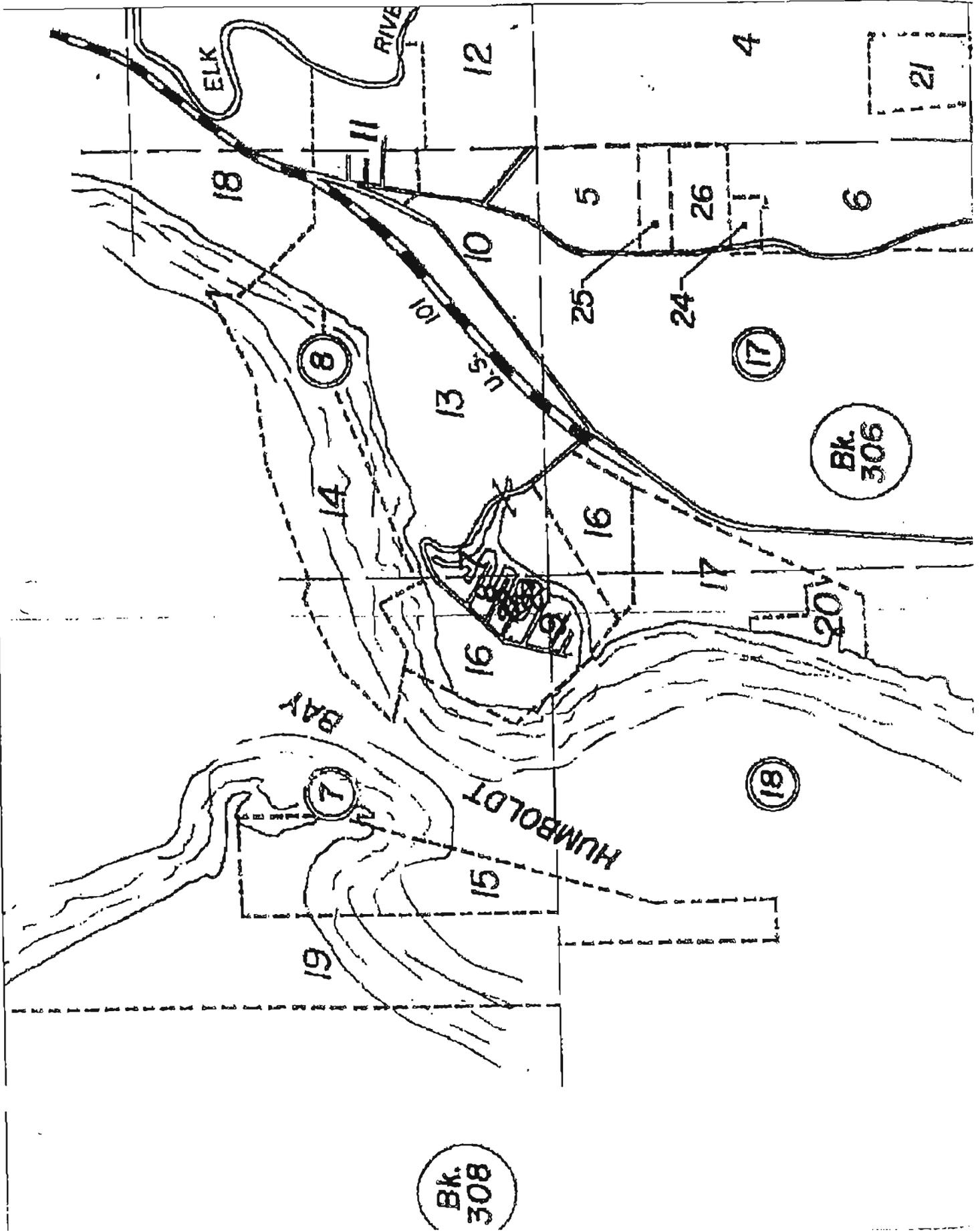
RECORDED
INDEXED
MAY 15 1955

118 2/14/52

POR. OF SECS. 7, 8, 9, 10, 16, 17, 8, 18 T4N, R1W



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BOOK 305
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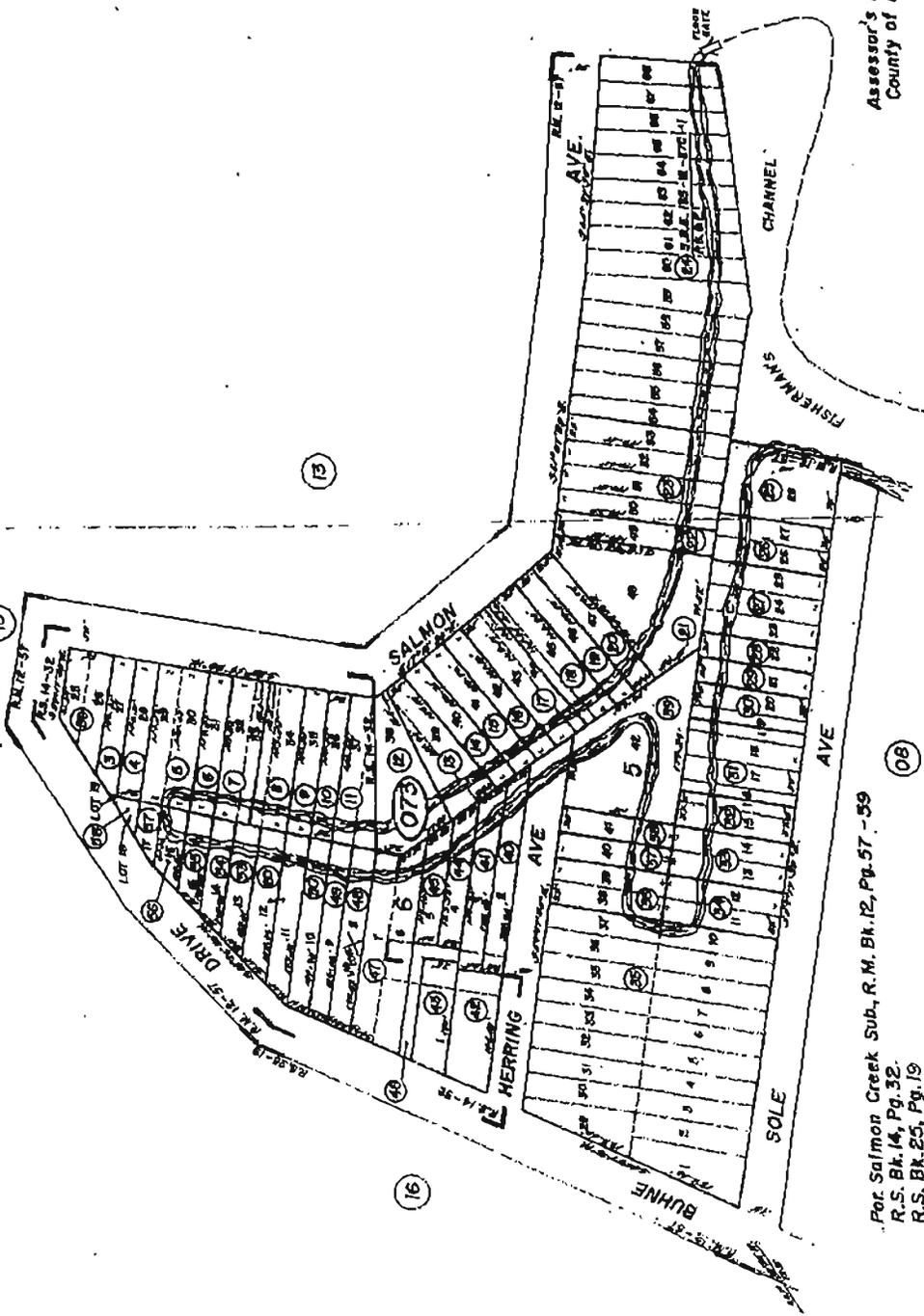
SCALE IN FEET AND INCHES



305-07



POR. SEC'S. 7, 8 & 9, T. 4 N., R. 1 W., H. B. & M.
(KING SALMON)



Assessor's Map BL 305 - Pg. 07
County of Humboldt, Calif.

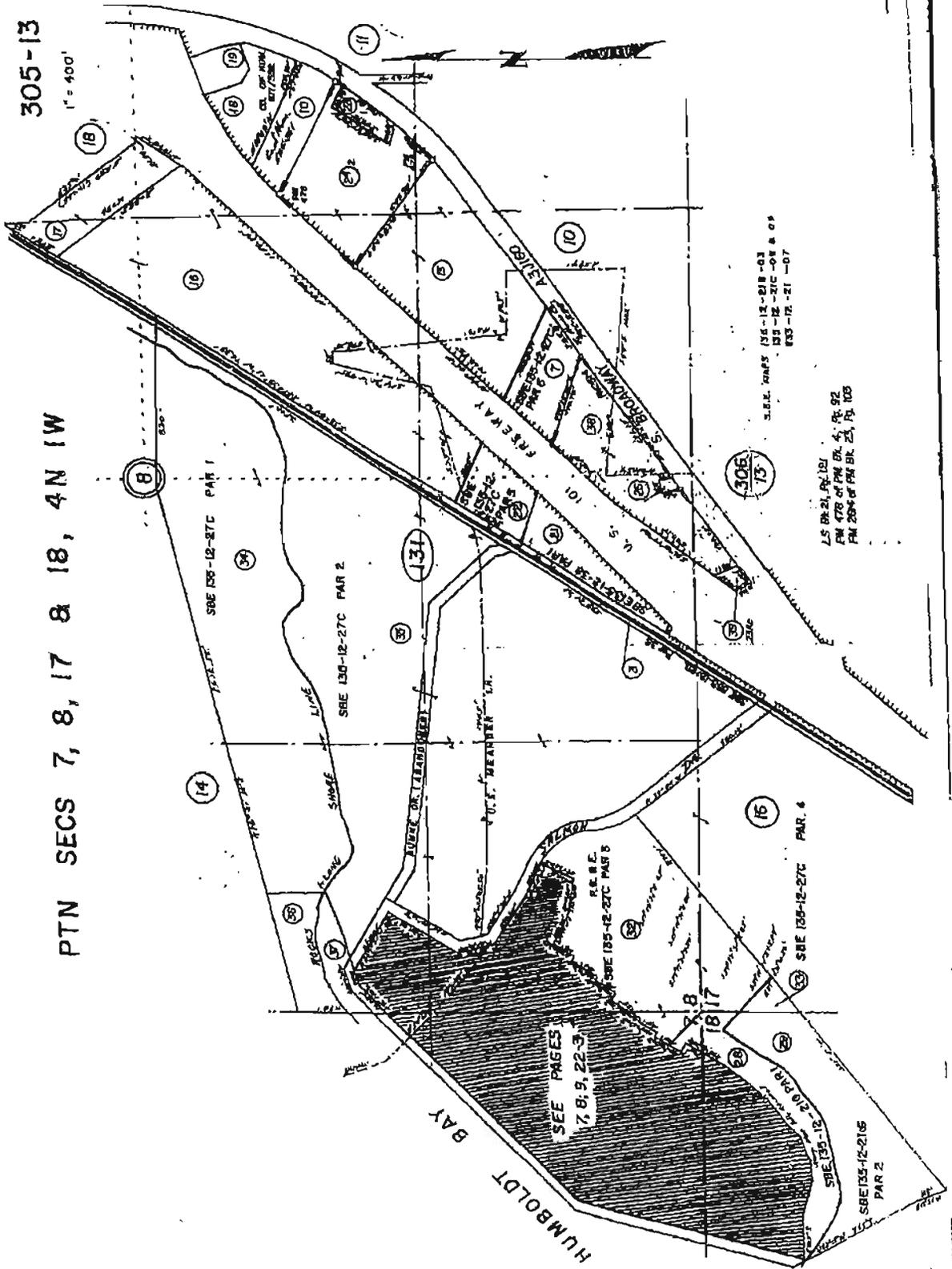
JUN 9 1957

Por. Salmon Creek Sub., R. M. Bk. 12, Pg. 57 - 59
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305-13

1" = 400'

PTN SECS 7, 8, 17 & 18, 4N 1W



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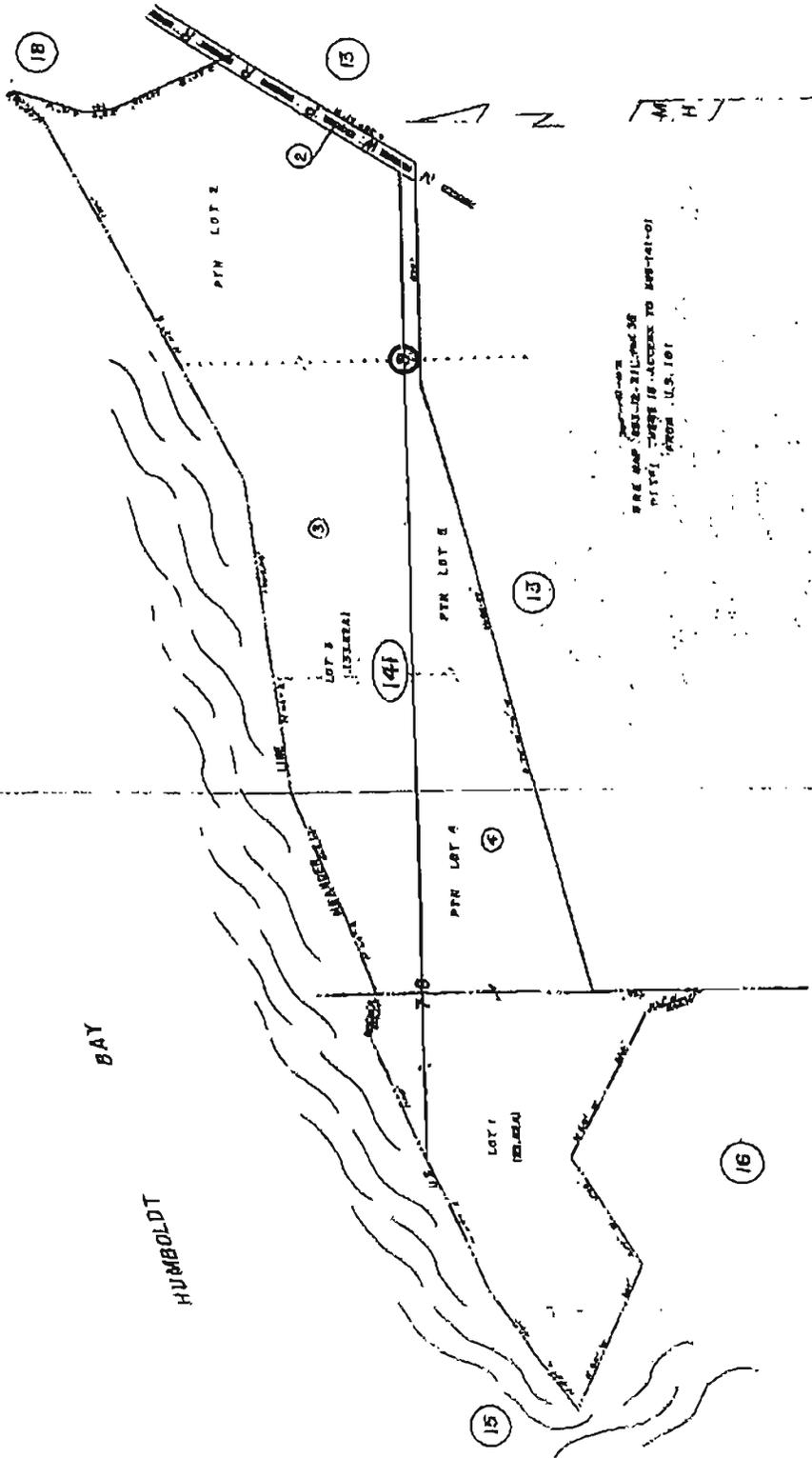
305-14

1" = 400'

PTN SECS 7 & 8, 4N1W

BAY

HUMBOLDT



APPENDIX B

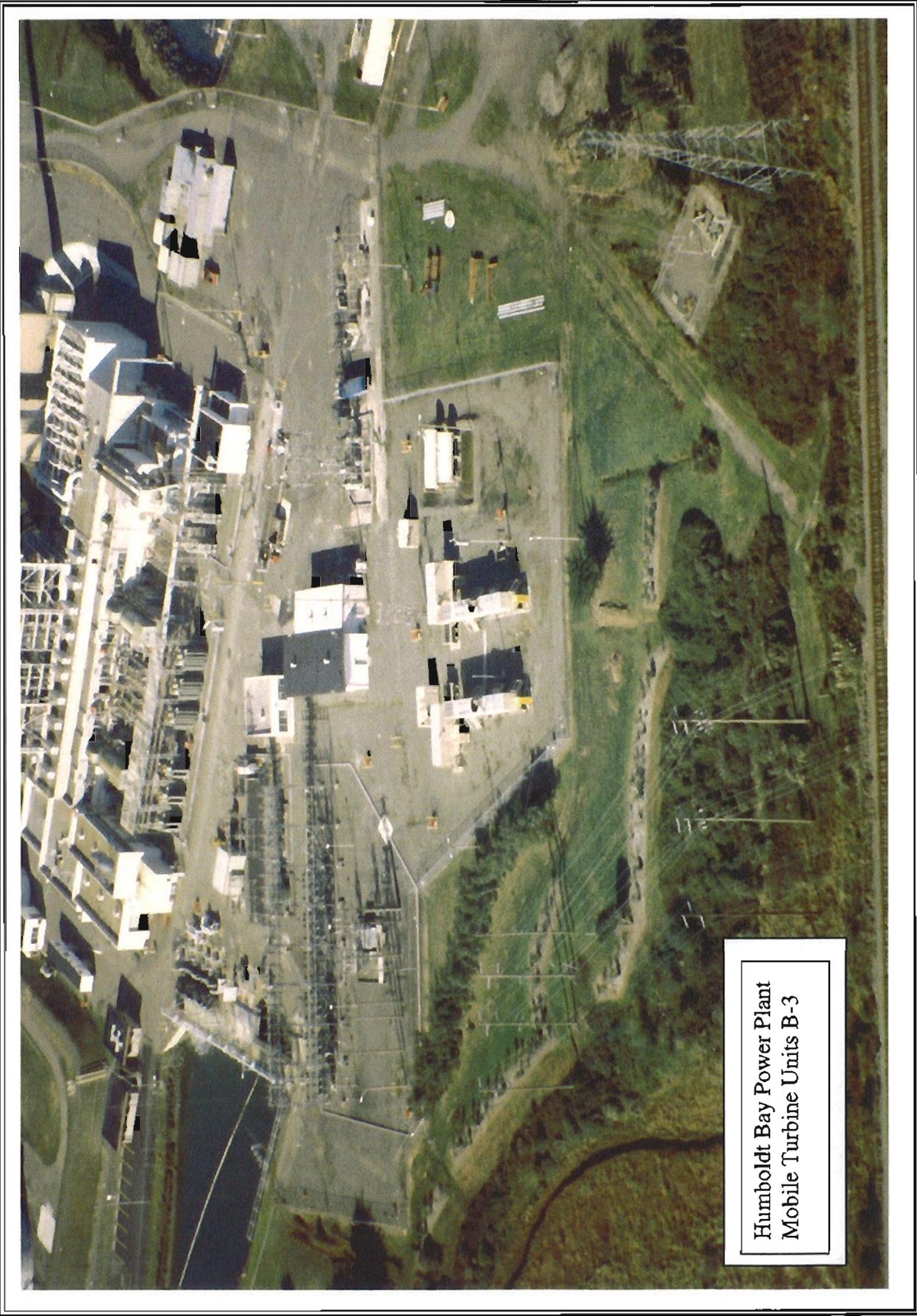
AERIAL PHOTOS



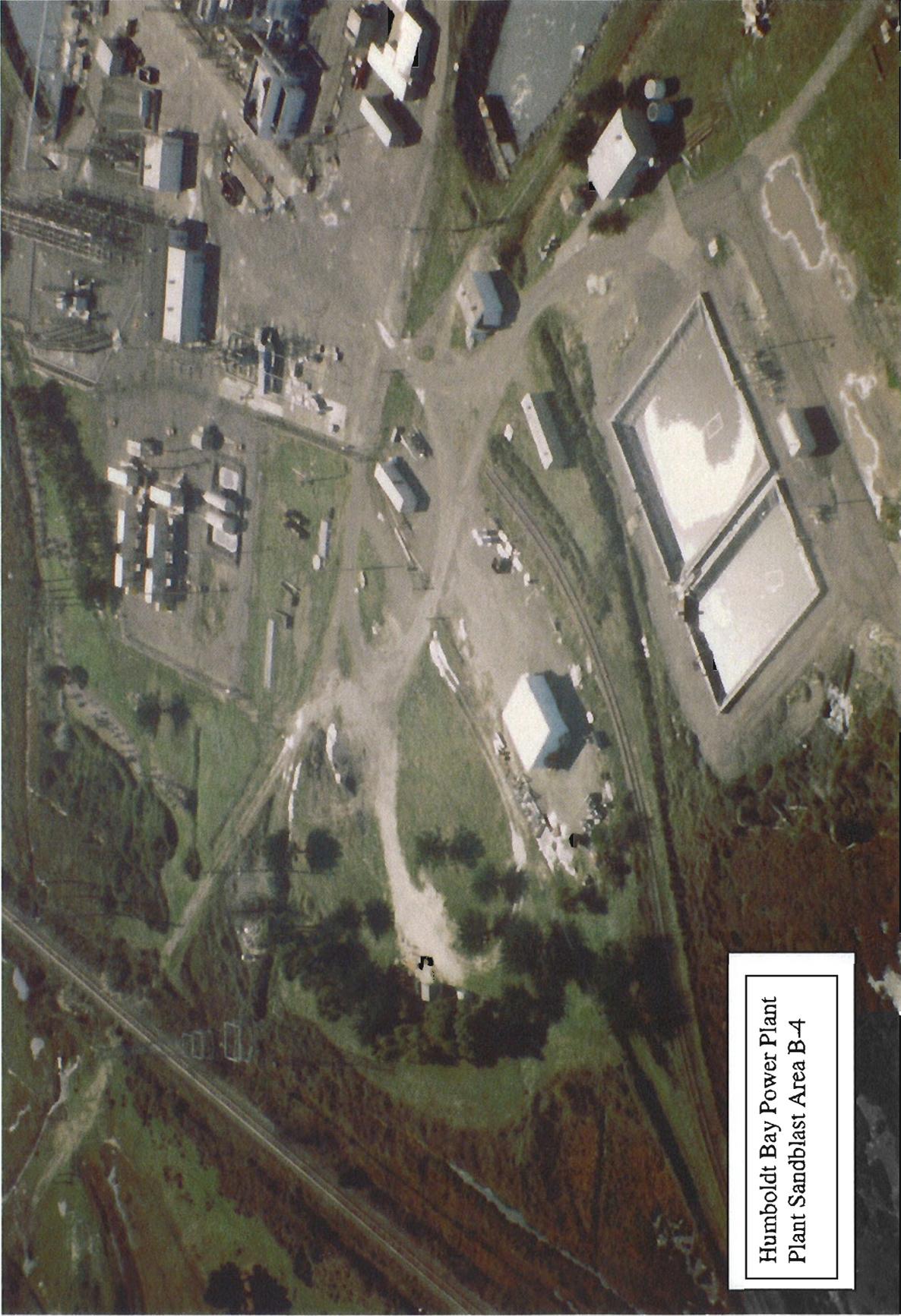
Humboldt Bay Power Plant
Historic Site Photo B-1
1950's



Humboldt Bay Power Plant
Mid 50s Photo B-2



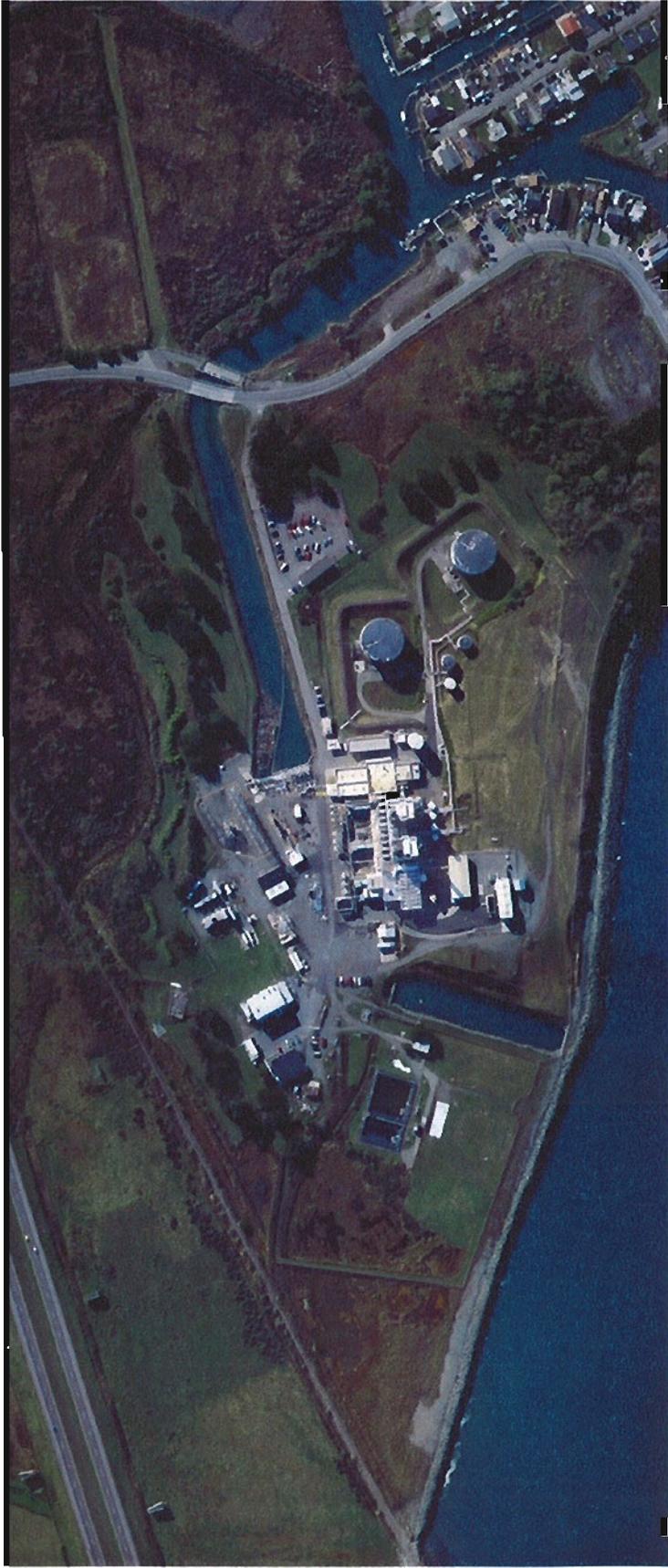
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Humboldt Bay Power Plant
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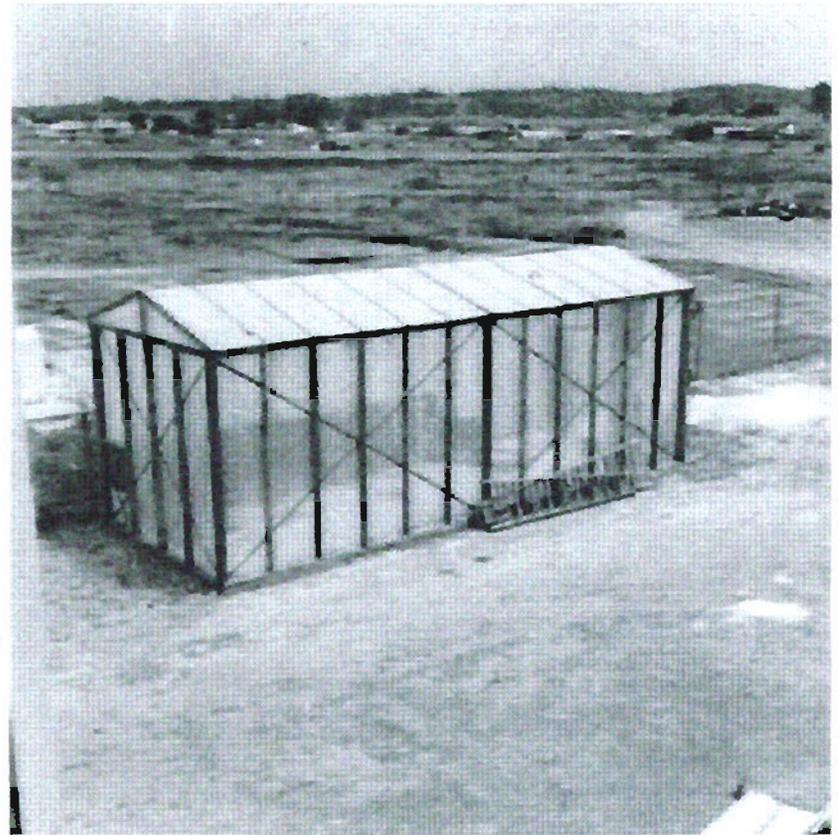
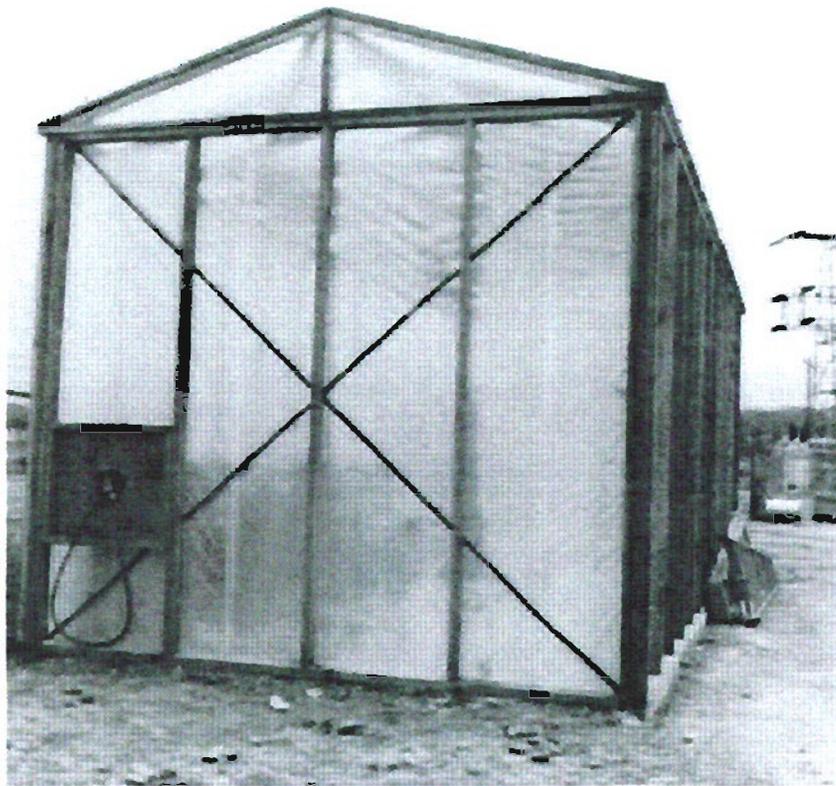
Humboldt Bay Power Plant
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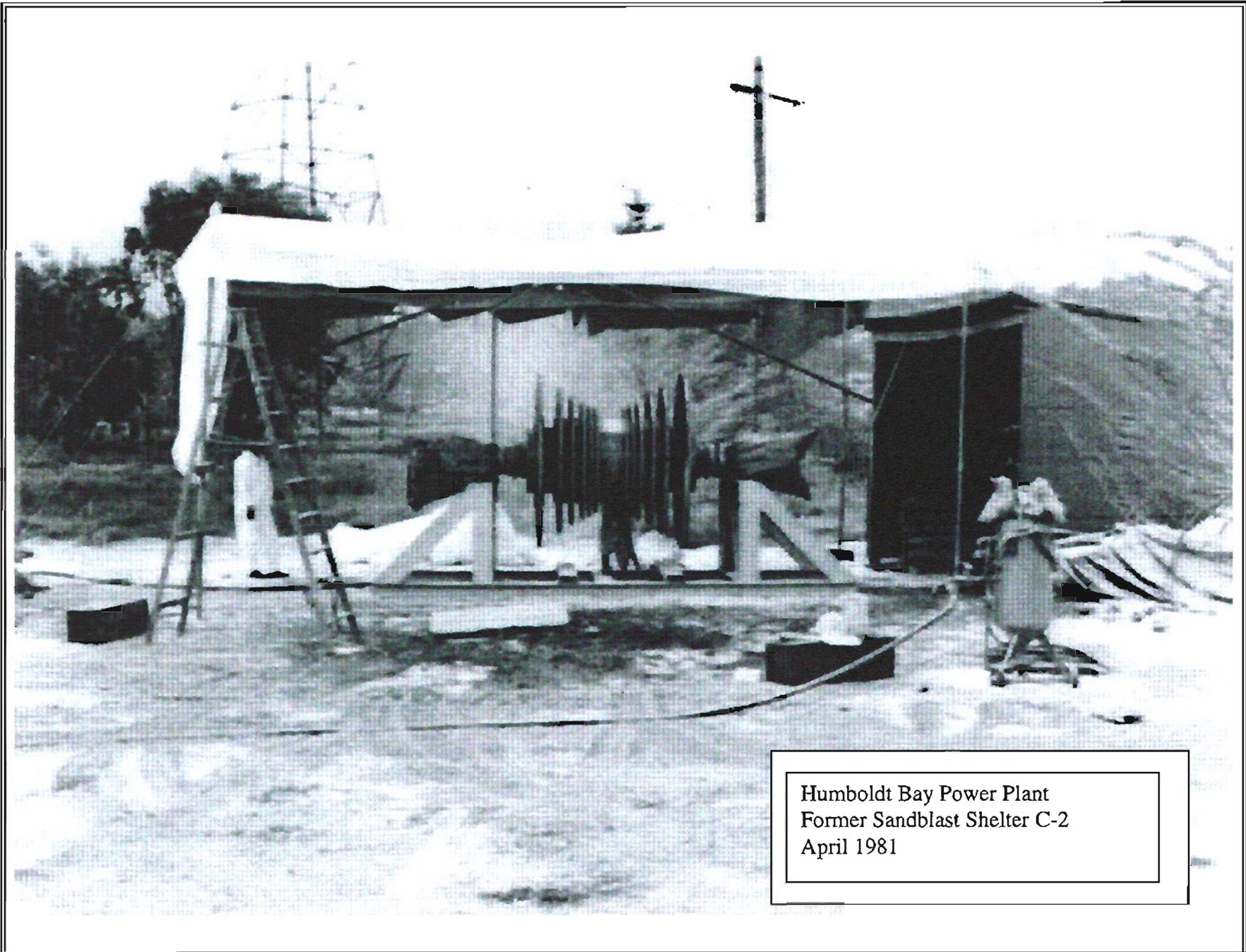
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APPENDIX C

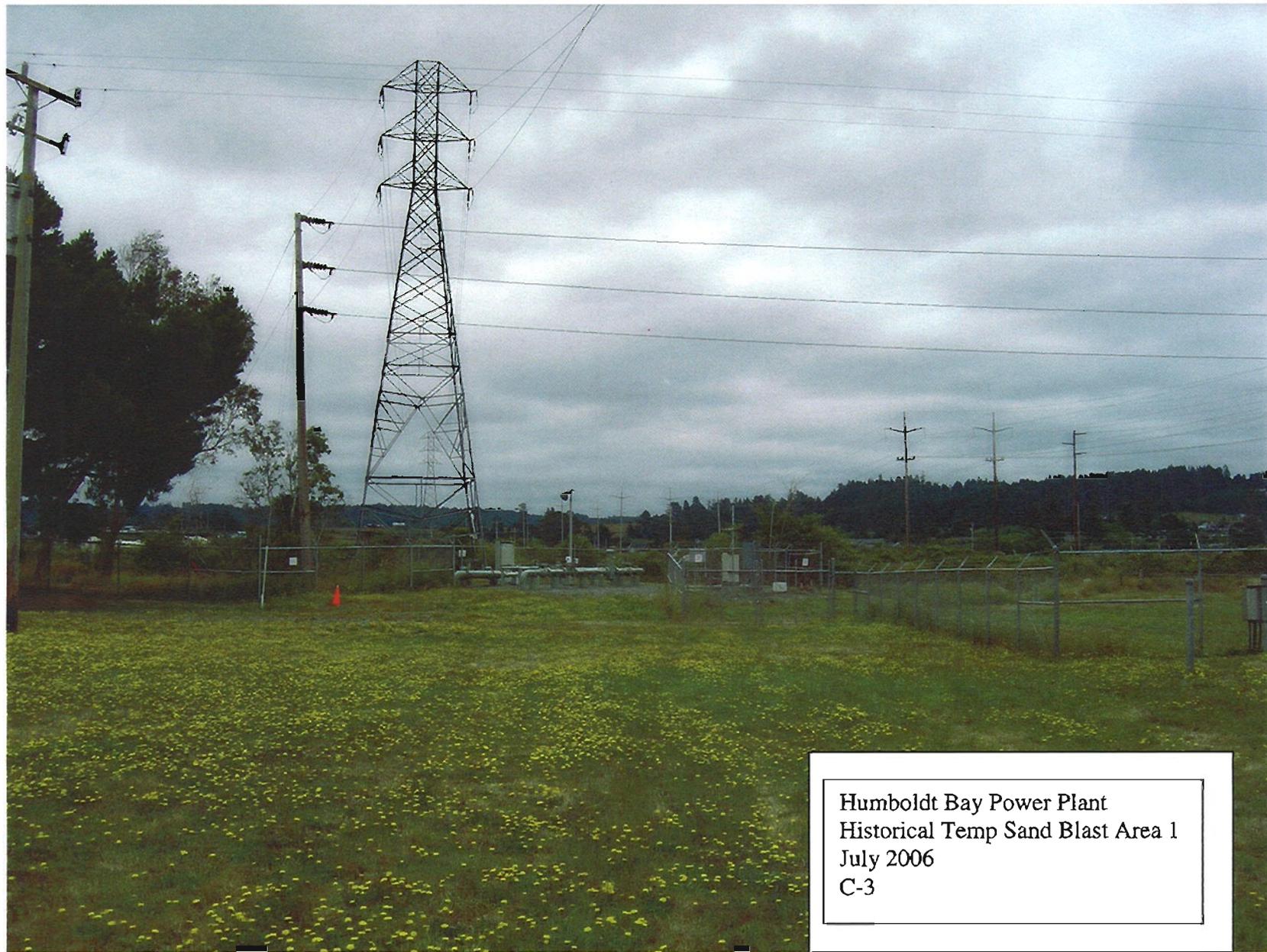
SITE PHOTOS



Humboldt Bay Power Plant
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Humboldt Bay Power Plant
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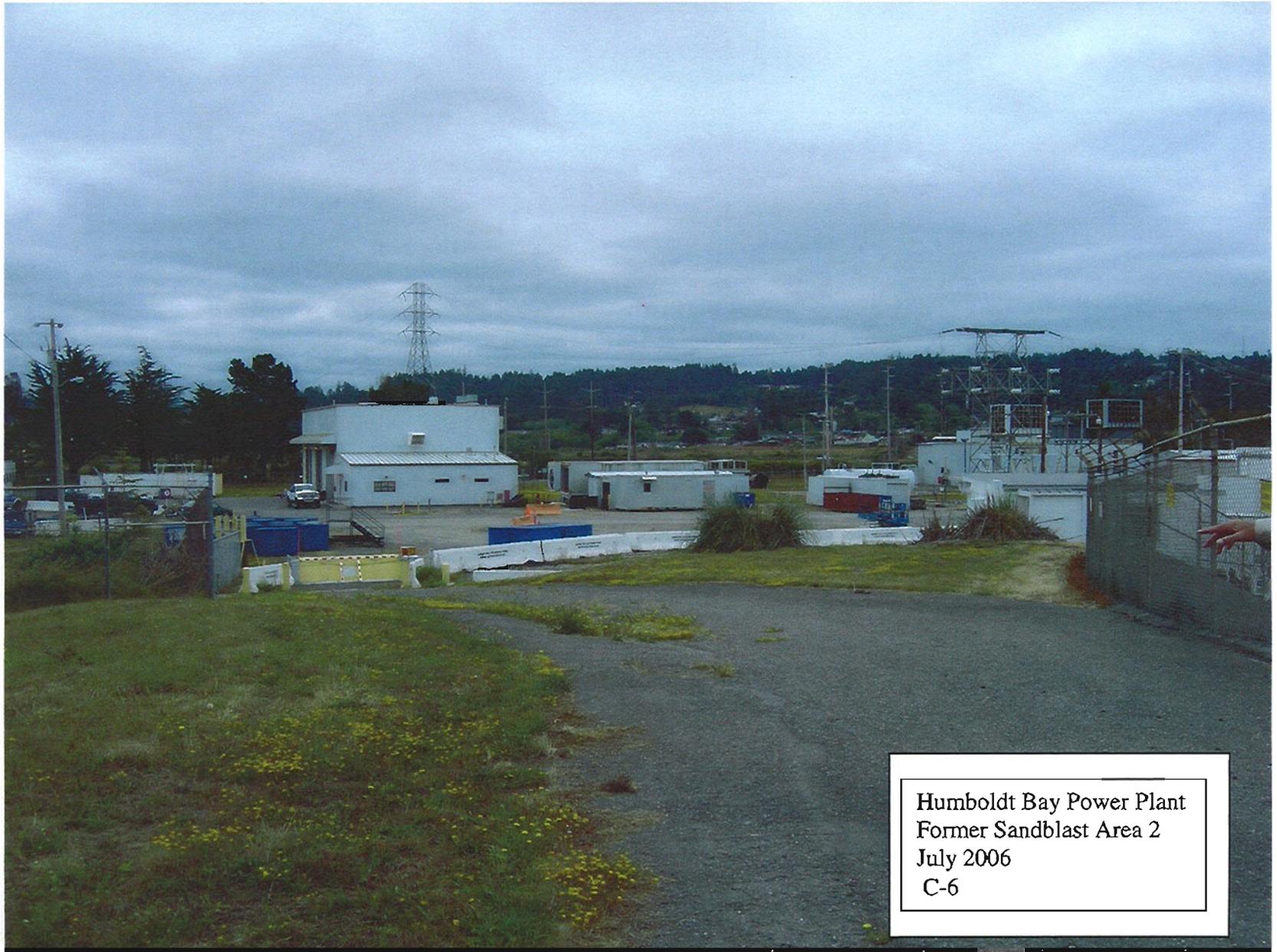
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Humboldt Bay Power Plant
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Humboldt Bay Power Plant
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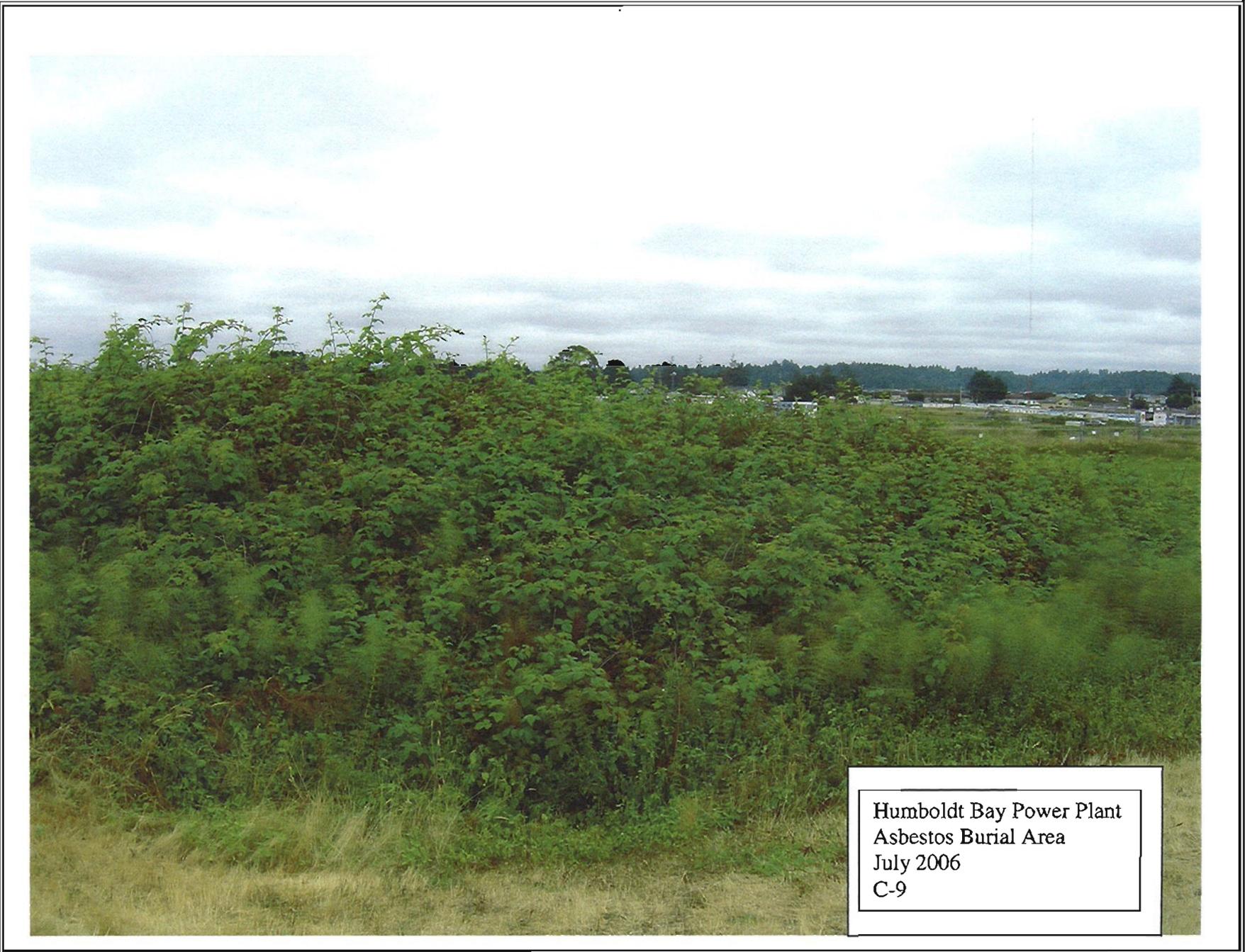
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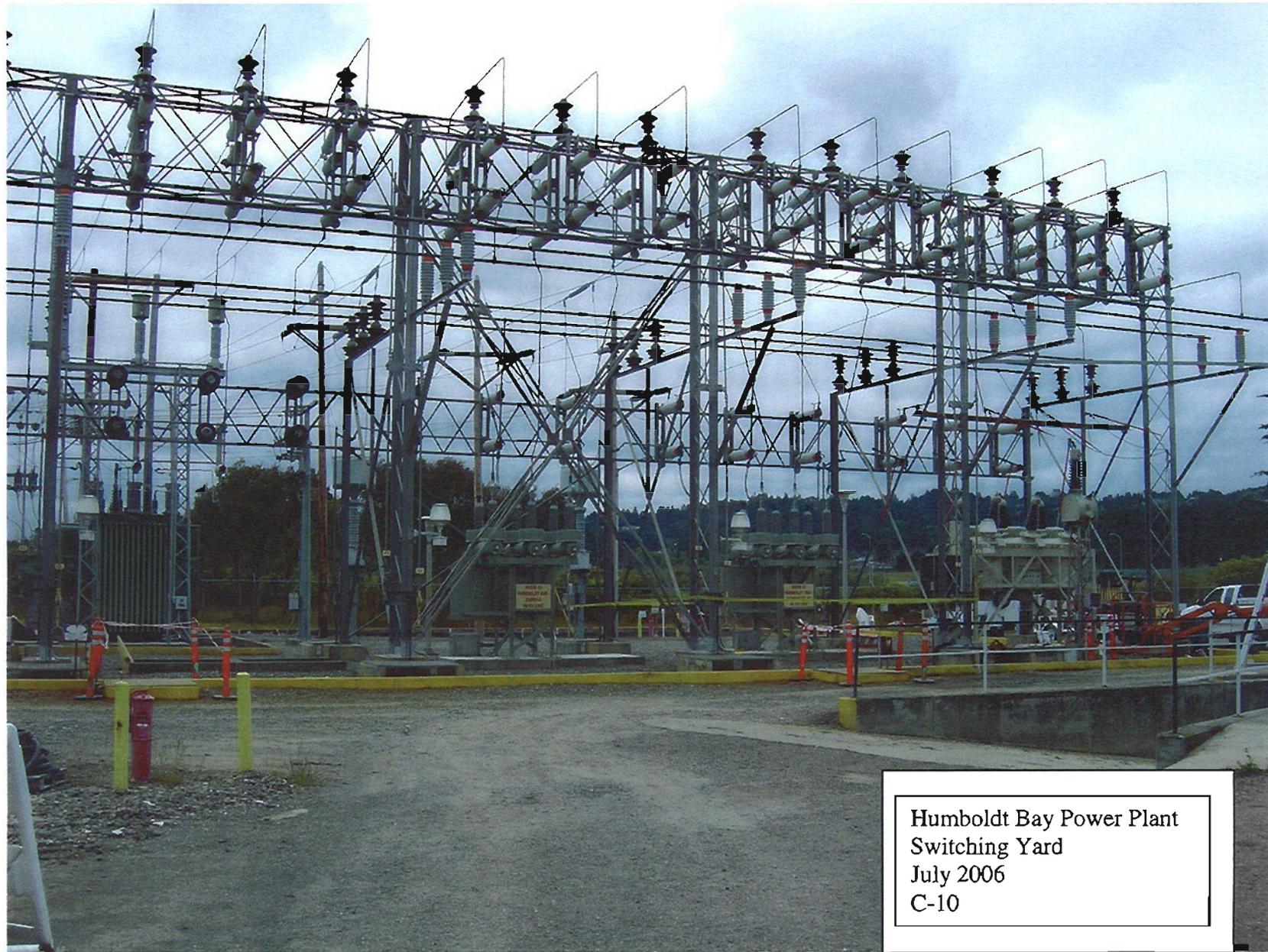
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Humboldt Bay Power Plant
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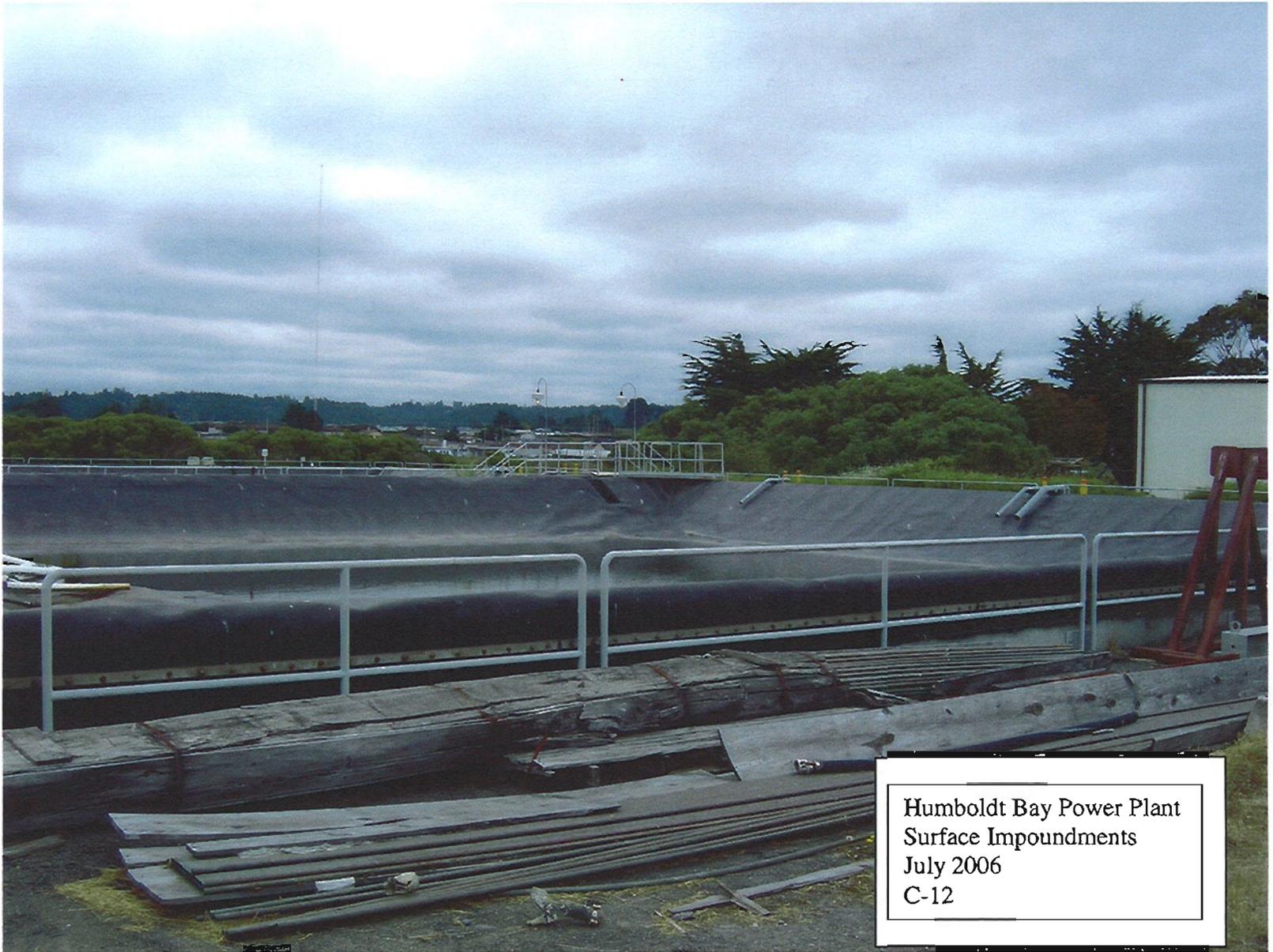
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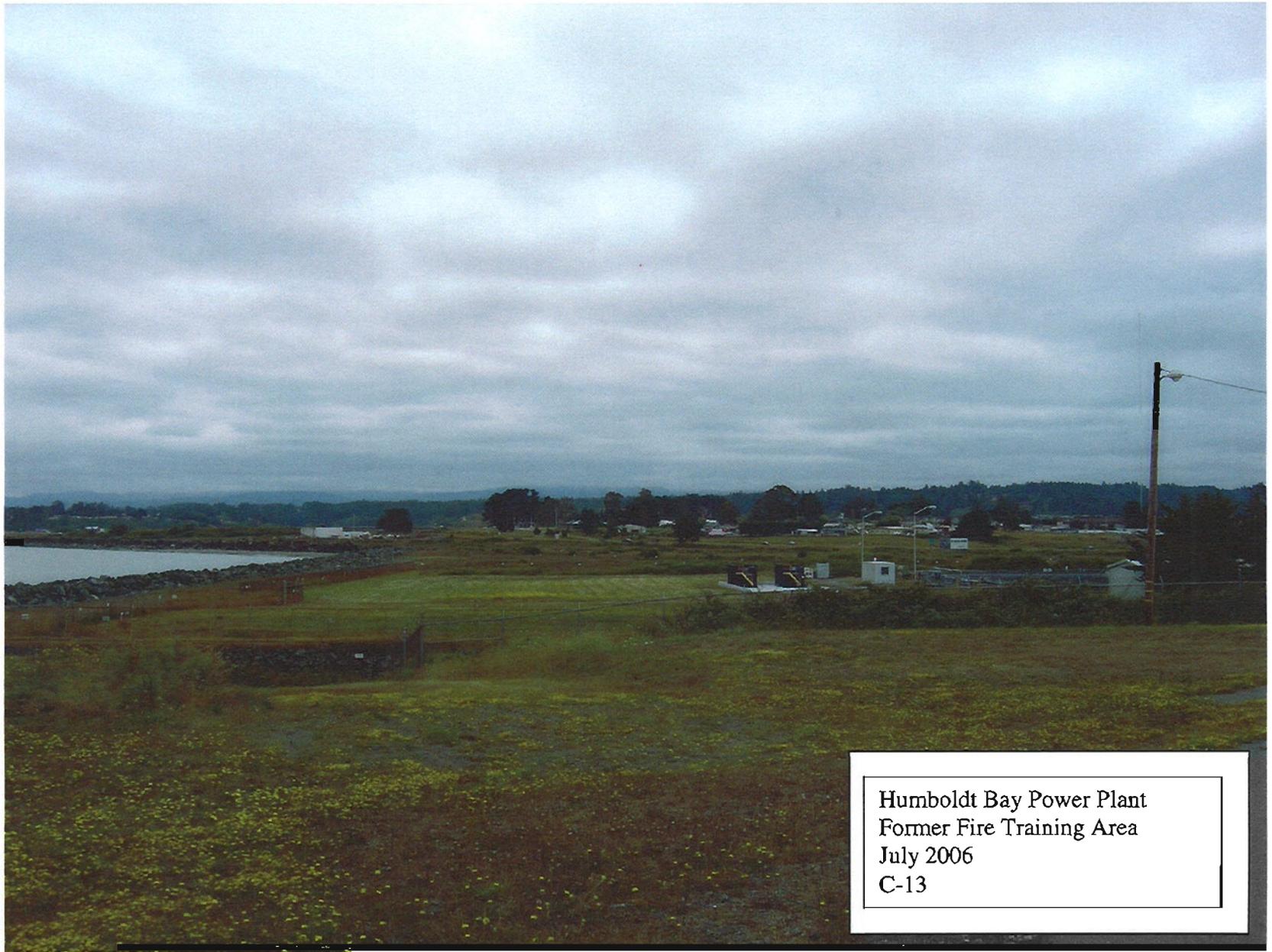
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Humboldt Bay Power Plant
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Humboldt Bay Power Plant
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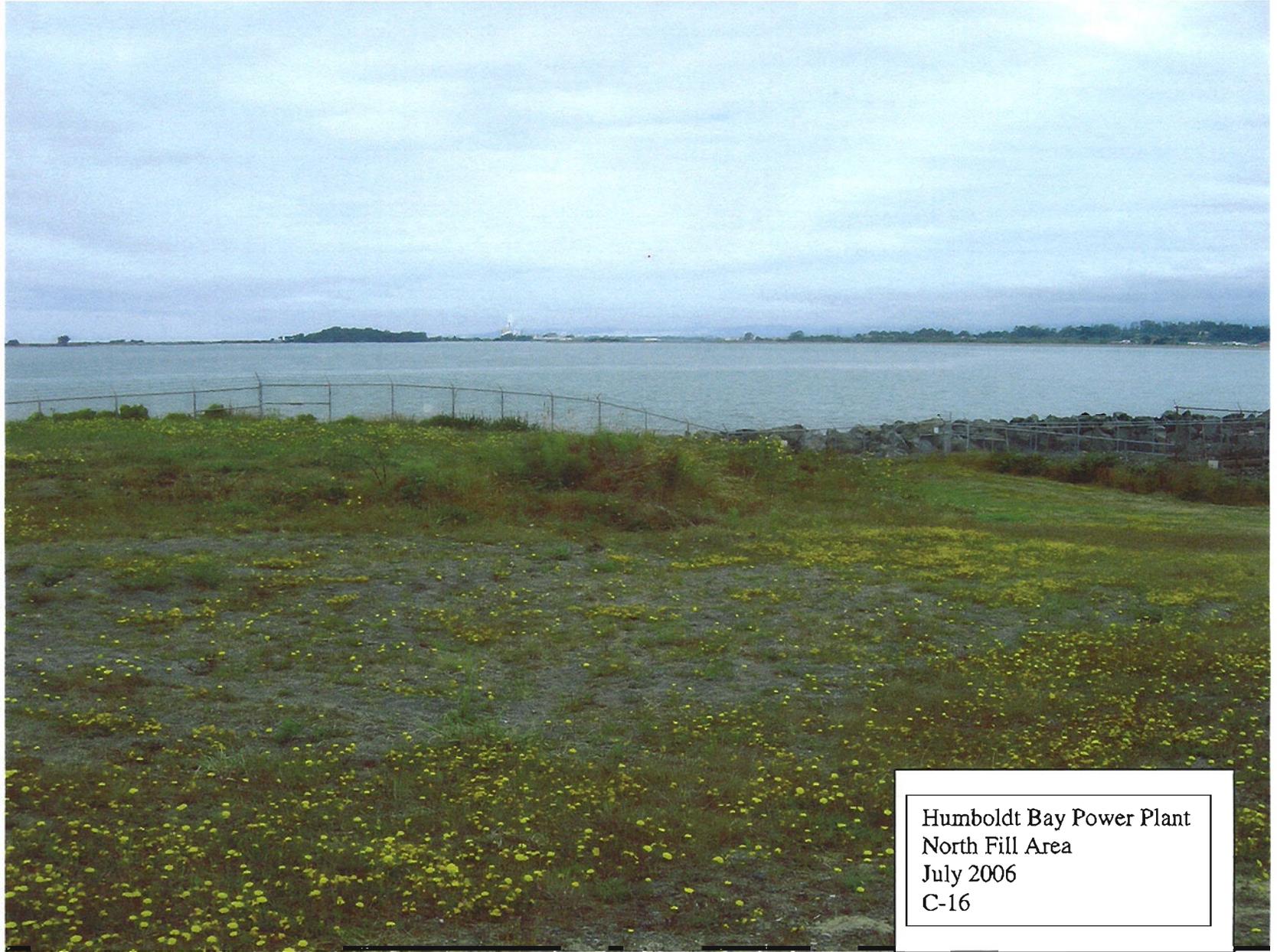
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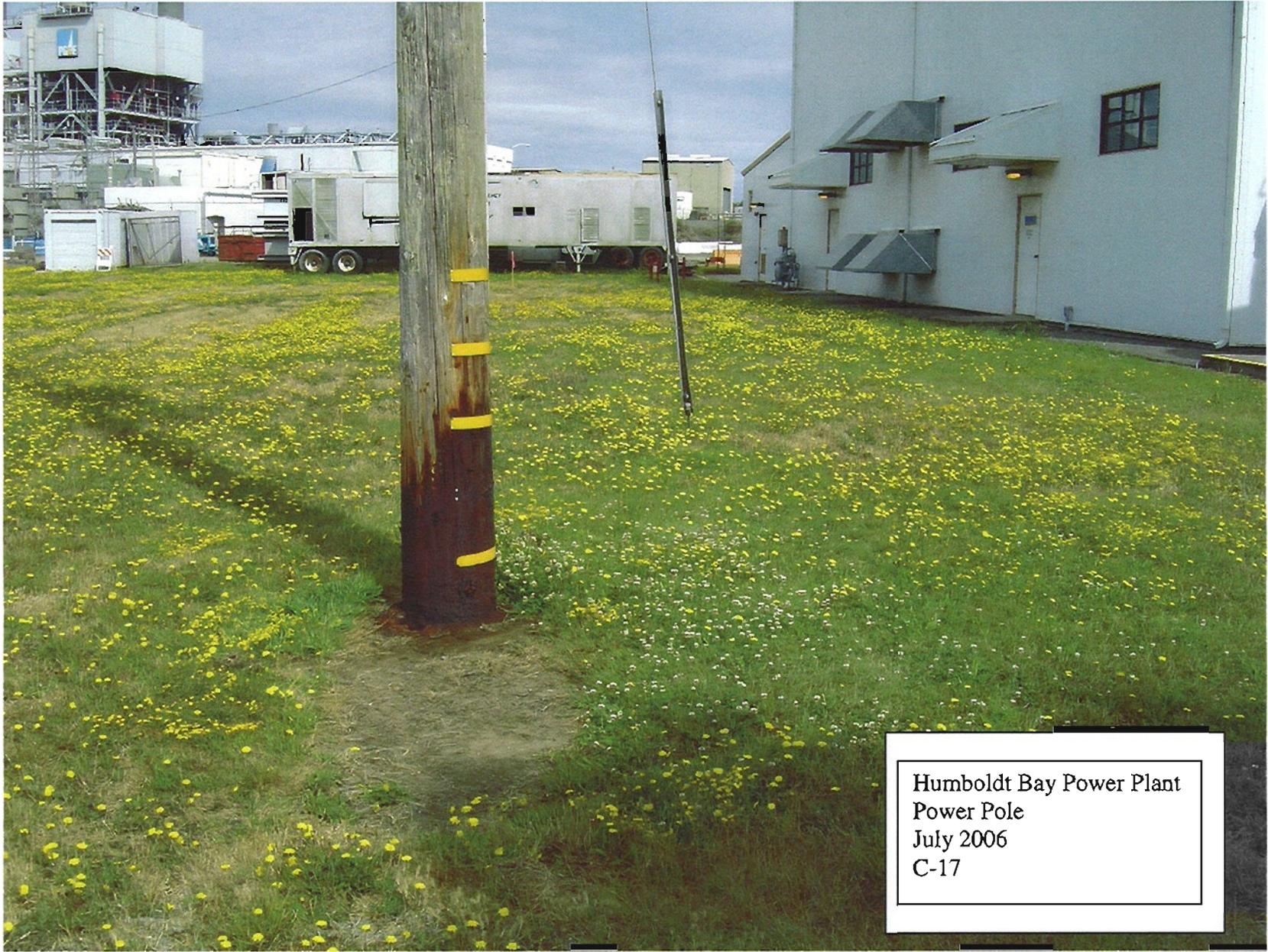
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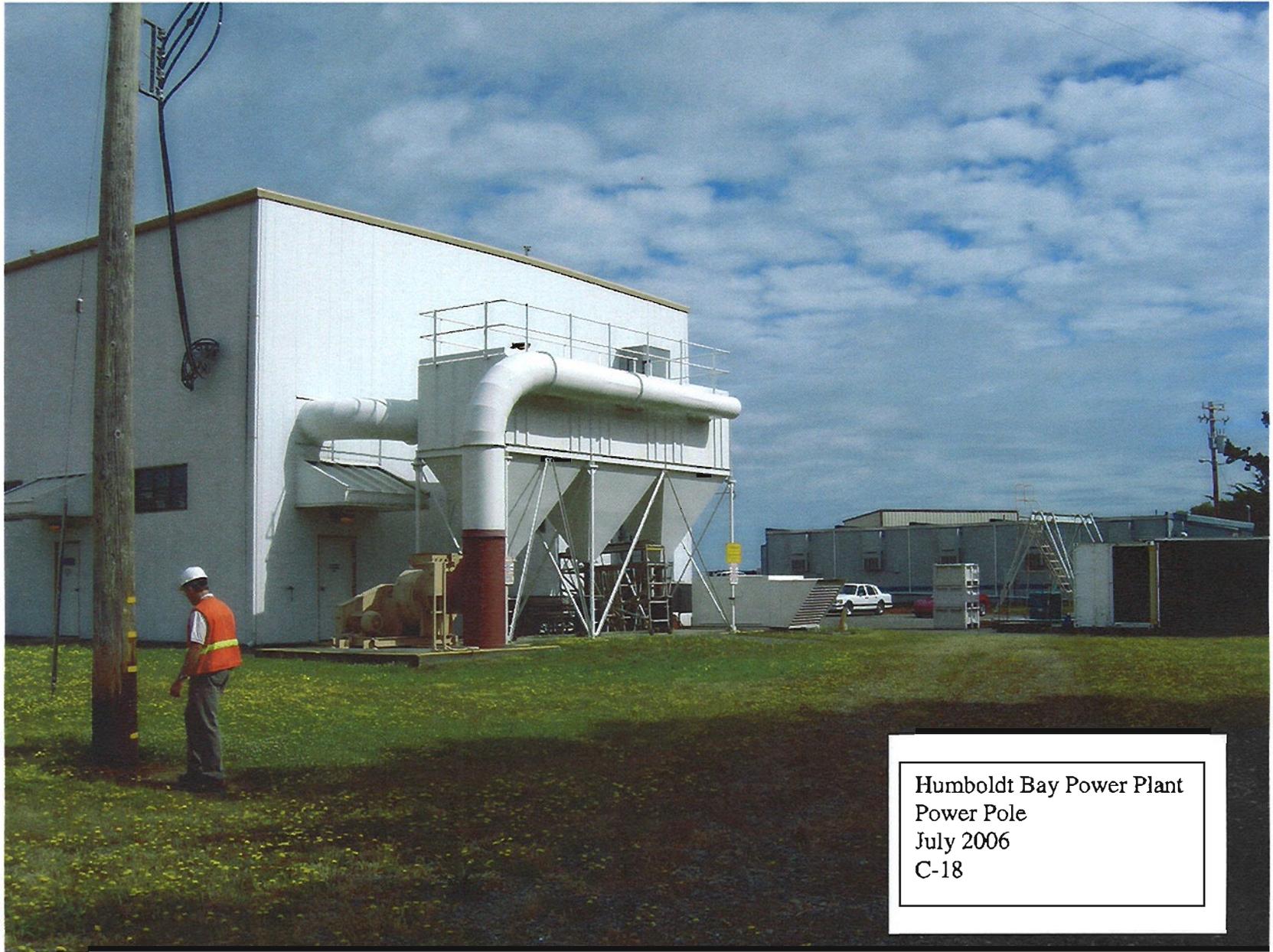
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Humboldt Bay Power Plant
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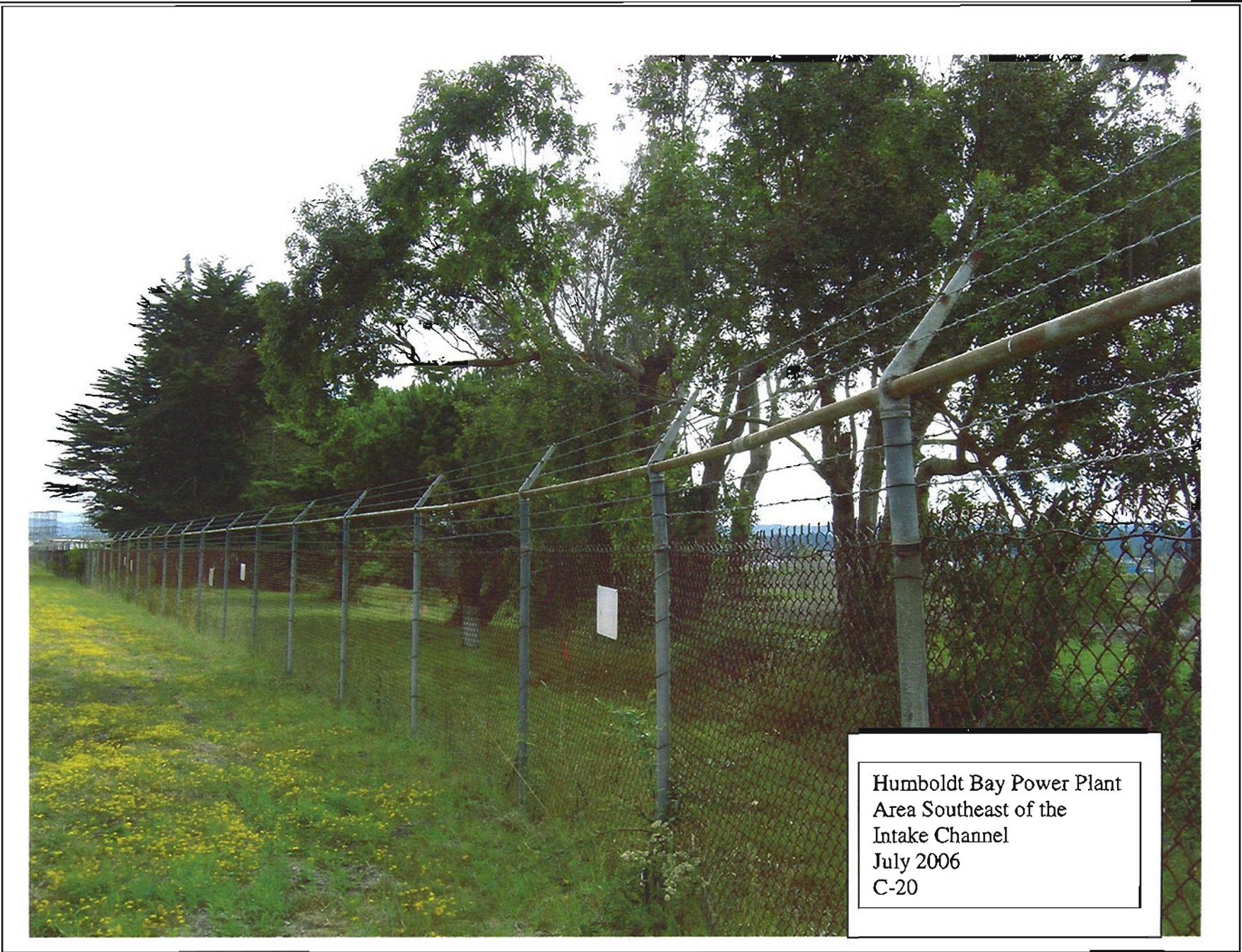
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Humboldt Bay Power Plant
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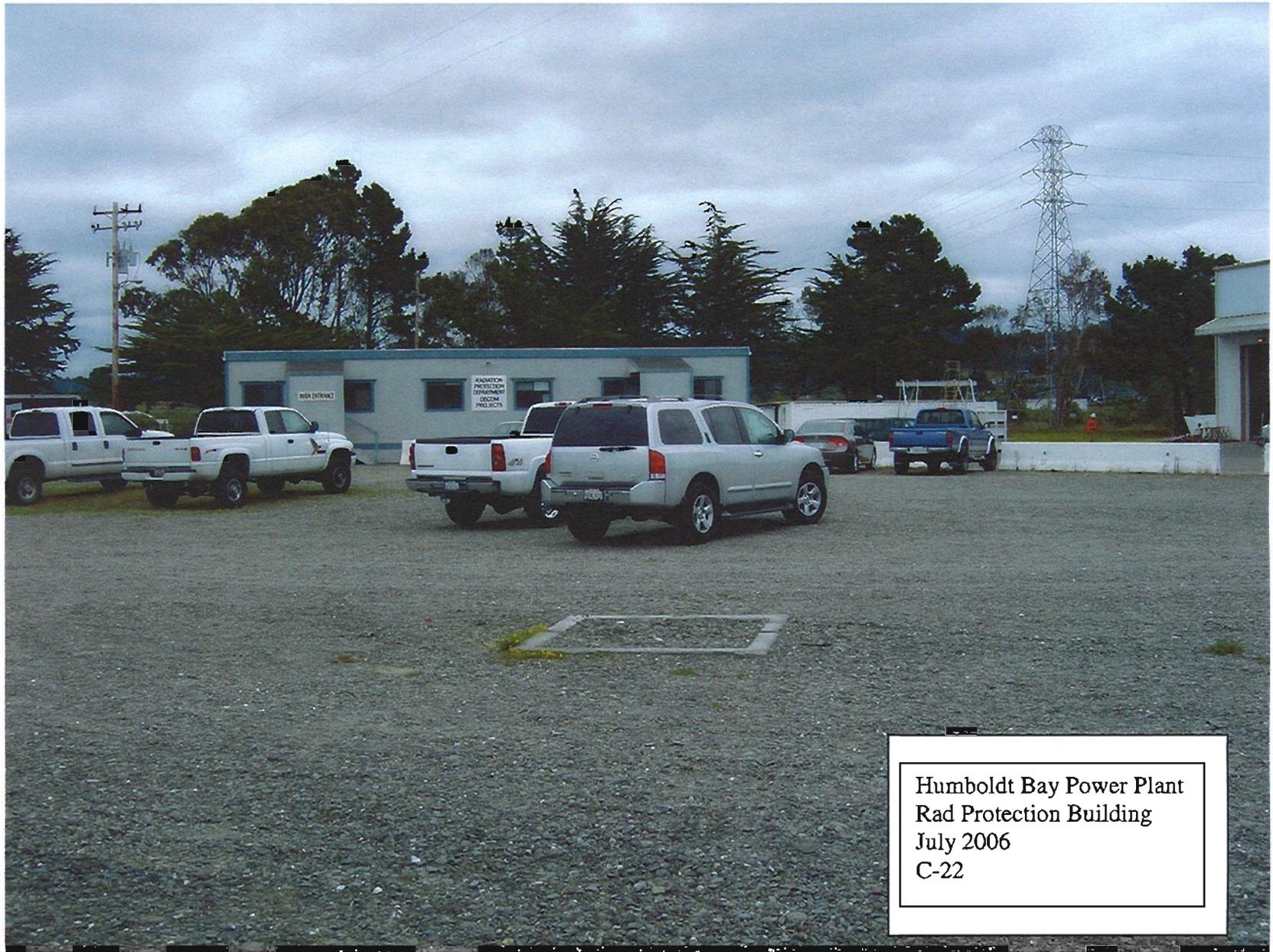
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Humboldt Bay Power Plant
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Humboldt Bay Power Plant
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Humboldt Bay Power Plant
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Humboldt Bay Power Plant
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