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NATIONAL REGISTER

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in Guidelines for Completing National Register Forms (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries. Use letter quality printer in 12 pitch, using an 85 space line and a 10 space left margin. Use only 25% or greater cotton content bond paper.

1. Name of Property Santa Clara Hydroelectric Power Plants Historic District

historic name Veyo (#1), Sand Cove (#2), Gunlock (#3)

other names/site number Santa Clara no. 1, Santa Clara no. 2, Santa Clara no. 3

2. Location

street & number Santa Clara River, near State Highway 18 n/a not for publication

city, town No.1-Veyo; No.2-vac. Veyo; No.3-Gunlock x vicinity

state Utah code UT county Washington code 053 zip code 84722

3. Classification

Ownership of Property	Category of Property	No. of Resources within Property	
		contributing	noncontributing
x private	___ building(s)		
___ public-local	x district	5	2 buildings
___ public-State	___ site	___	___ sites
___ public-Federal	___ structure	7	3 structures
	___ object	___	___ objects
		12	5 Total

Name of related multiple property listing:

Electric Power Plants of Utah

No. of contributing resources previously listed in the National Register 0

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this _x_ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property _x_ meets ___ does not meet the National Register criteria. ___ See continuation sheet.

Max J Evans — 1-31-89

Signature of certifying official — Date

UTAH STATE HISTORICAL SOCIETY

State or Federal agency and bureau

In my opinion, the property ___ meets ___ does not meet the National Register criteria. ___ See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

✓ entered in the National Register. ___ See continuation sheet — Bruce J. Noble, Jr. — 4/21/89

___ determined eligible for the National Register. ___ See continuation sheet

___ determined not eligible for the National Register.

___ removed from the National Register.

___ other, (explain:) _____

for Signature of the Keeper — Date

6. Functions or Use

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
Industry/Processing/Extraction: energy facility	Industry/Processing/Extraction: energy facility

7. Description

Architectural Classification (enter categories from instructions)	Materials (enter categories from instructions)
	foundation concrete
Bungalow/Craftsman	walls concrete, stone
Modern Movement	
Other; single-cell adobe shed	roof asphalt
	other adobe

Describe present and historic physical appearance.

(see continuation sheet)

x See continuation sheet

Built during the 1920s, the Santa Clara Hydros are located in Washington County near St. George. The plants consist of powerhouses, dams, conduit, standpipes, penstocks, as well as associated structures such as sheds. The Santa Clara Hydros Historic District, made up of five discontiguous elements, includes twelve contributing and five noncontributing structures. The five discontiguous elements are: 1) the Veyo powerhouse and ancillary structures; 2) the Upper Sand Cove dams; 3) the Sand Cove powerhouse and associated structures; 4) the Lower Sand Cove Dam; and 5) the Gunlock powerhouse and associated structures. Linking these five elements are sections of conduit which for reasons of integrity have been excluded from the district. Other than alterations to conduit, the Santa Clara Hydros have undergone other changes, such as the removal of operator's dwellings. These changes, however, do not compromise the plants' overall integrity of location, setting, design, materials, workmanship, feeling, and association. The Santa Clara Hydros continue to represent an outstanding example of a series of high-head hydroelectric plants ideally suited to the desert environment in which they were built.

General Setting

The Santa Clara Hydros, designated as nos. 1, 2, and 3, and also generally known as Veyo, Sand Cove, and Gunlock, are located in the central portion of Washington County, Utah, about 20 miles northwest of St. George. Washington County is in the far southwest corner of Utah, and abuts the states of Nevada and Arizona. North of Washington County is Iron County. Zion National Park is located in the northeast corner of Washington County, about 40 miles from St. George. The Shivwits Indian Reservation is situated in the county's southwest corner. Washington County covers diverse terrain. Mostly it is desert, including reefs, plateaus, canyons, washes and basins. The county also has forested mountains. Two principal rivers, the Virgin and the Santa Clara, drain Washington County. Both rivers flow in a southerly direction. The Santa Clara River, which furnishes water to the Santa Clara Hydros, originates in the Pine Valley Mountains north of St. George. The Santa Clara flows past the small towns of Veyo, Gunlock, and Shivwits, before joining the Virgin just south of St. George.

The Santa Clara Hydros are situated along the Santa Clara between the towns of Veyo and Gunlock. Veyo is about 7 miles upstream from Gunlock. State Highway 18 passes through the town. Between Veyo and Gunlock, the Santa Clara River flows through a narrow canyon, on the south side of which is an area of desert bench land and ravines which generally slope from the northeast to the southwest. North of the river, around the town of Veyo, is also bench land. About 1 mile south of Veyo, rising over 800 ft. above the surrounding landscape, is an extinct volcanic cone called Veyo Volcano.

None of the Santa Clara Hydros is situated directly adjacent to the Santa Clara River. All of the plants are connected by several lengths of conduit. Santa Clara no. 1 (Veyo) is located about 1.5 miles northwest of the town of Veyo. The powerhouse sits about 250 ft. north of the Santa Clara River. Water for the Veyo plant is diverted from the Santa Clara several miles upstream, past Baker Dam Reservoir. This water then runs through a canal west or north of the Santa Clara before entering the Veyo plant's penstock, the top of which is about 280 ft. above the powerhouse. Wastewater from Veyo passes into a system of canals and steel pipeline which carries the water southwest, under the Santa Clara River, around the east side of Veyo Volcano and across the sloping benches, to Santa Clara no. 2 (Sand Cove). Sand Cove is situated next to Sand Cove Wash about 6 miles southwest of the Veyo plant and about 1.75 miles from the Santa Clara River. Wastewater from Sand Cove passes through a steel pipeline which runs west, along the edge of Sand Cove Wash and across the sloping bench to Santa Clara no. 3 (Gunlock). The Gunlock powerhouse sits in the Santa Clara River bottom, on the east or south bank, about 400 ft. from the river. The powerhouse is situated at the foot of the steep, sloping side of the canyon. The top of the penstock is about 320 ft. above the powerhouse.

Each of the Santa Clara Hydros, including associated conduit, is described in greater detail below. The plants are described in the order in which they receive water. Veyo is the upstream plant, and is followed by Sand Cove and then Gunlock. The Santa Clara Hydros were originally numbered as follows: Gunlock (no. 1), Veyo (no. 2), and Sand Cove (no. 3). In the interests of consistency, the current ordering system, with Veyo first and

Gunlock last, will be used in this nomination.

SANTA CLARA NO. 1 (Veyo)

1. Dam

Water for the Santa Clara hydroelectric power plants is diverted from from the Santa Clara River at a small rock and concrete diversion dam, located about 3 miles upstream from the Veyo powerhouse. This dam is about 20 ft. across and about 4 ft. high. It is composed of the following features, in order from west to east: first, a low rubble wall; second, a wood headgate flanked by concrete abutments; third, a concrete wing wall which directs water toward the headgate; fifth, a small flashboard gate flanked by concrete abutments; and sixth, a low concrete spillway which carries water from the Santa Clara which does not pass into the canal.

This dam has undergone material changes over the years, particularly the addition of new concrete to various parts. The structure no longer retains its integrity of materials and thus it no longer represents the historic associations of the Santa Clara Hydros as a whole. For this reason it is excluded from the Santa Clara Hydros Historic District.

2. Conduit

Water for the Santa Clara plants passes through the wood headgate described above and into a canal, known as the Veyo Ditch, which is approximately 22,000 ft. in length. This canal, which varies between about 5 ft. and 10 ft. in width, runs between the dam and the top of the Veyo penstock. A small part of the water that runs through the canal passes through a short stretch of steel pipe about 700 ft. long, installed in 1986. The portion of the canal between the dam and the steel pipe was recently lined with concrete. Past the steel pipe, the Veyo ditch is dug into the earth and volcanic rock of the local terrain. Portions of the ditch are lined with concrete. Before reaching a concrete head box at the top of the penstock, the Veyo ditch passes through several short culverts which allow automobiles to cross the ditch. The Veyo ditch also includes a modern steel weir and two overflow

headgates, which allow excess water to return to the Santa Clara River. The head box consists of an open, rectangular concrete structure which collects water from the Veyo ditch and channels it into the penstock. Steel trash racks cover the opening to the penstock. A steel walkway crossing the head box allows a workman to clean the trash racks.

Overall, the Veyo ditch retains its basic integrity. Alterations and additions to the ditch, however, make a final integrity assessment difficult. Moreover, the ditch at one end is connected to the dam which has lost its integrity, while at the other end it is connected to the recently-built penstock. For these reasons the Veyo ditch is excluded from the historic district.

3. Penstock

The Veyo penstock consists of a welded steel pipe about 1,200 ft. in length. This pipe, which rests on saddles made of rubble, drops approximately 240 ft. between the head box and the powerhouse. The penstock was installed within the last few years, so it is excluded from the historic district.

4. Powerhouse

In 1920, the Veyo powerhouse was built, with stone coming from a quarry near the site of construction (according to an interview with Ivan Hunt). The powerhouse is a rectangular-shaped, one-story structure of cut, coursed ashlar stone with a concrete foundation and an asphalt-shingled gable roof. Along the roof ridge are a metal ventilator and small vent. Exposed rafter ends extend from under the roof eaves. The building's windows are 2/2 double hung with concrete sills and lintels and are screened. On the south side is bay for double doors which has been filled with wood and a single wood door with a 1-light transomn added. Above the entrance, which has screen doors, is a concrete lintel. Another door under a concrete lintel provides access into the building on the east side. A window on the north side has been filled in with concrete blocks. Adjacent to the northeast side of the plant is the substation. The penstock enters a large concrete block before entering the powerhouse on the north side. Wastewater leaves the building on the west side and flows into a

concreted tailrace. The tail race then enters the Santa Clara River which loops around the north and west side of the station.

Like the exterior of the building, the interior of the Veyo powerhouse exhibits a simple, functional design. The roof is held up by trusses made of wood planks. Power machinery consists of a large Pelton wheel (probably original to the plant) connected to a 2,300 volt, 500 kilowatt a.c. generator built by General Electric (probably installed in 1939). Running off the turbine shaft, a system of belts and a lineshaft seated on the turbine housing drive a small d.c. exciter and connect to the turbine's ball governor. Against the north wall of the powerhouse interior is a modern switchboard. Nearby is a bank of storage batteries. The Veyo powerhouse also features a 5-ton, overhead travelling crane manufactured by the Cyclops Iron Works.

The Veyo powerhouse, although having undergone some minor modifications, still retains integrity of design, setting, materials, workmanship, location, feeling, and association. It contributes to the Santa Clara Hydros Historic District and is the primary feature of the Veyo element of the district.

5. Switchyard

Adjacent to the powerhouse is a modern steel switchrack with transformers. Of recent construction, this is a non-contributing feature in the Veyo powerhouse element of the Santa Clara Hydros Historic District.

6,7. Ancillary Structures

The Veyo station has two new buildings. The fenced enclosure surrounding the powerhouse also contains a modern building (no. 6) used as an office. A wood-framed, metal-covered, pre-fabricated structure, the office has no visible foundation and rounded metal roof. Windows are 2-light sliders and the doors have 1-lights. Outside of the yard, to the east of the powerhouse, is a new metal garage (no. 7). Rectangular-shaped, the metal structure has a metal gable roof and rests on a concrete slab. A metal garage door and a single entrance with a wooden door face south. Because they are of recent construction, these buildings do not contribute

to the Veyo powerhouse component of the Santa Clara Hydros Historic District.

Originally, the Veyo station had two frame operators' cottages and a corrugated iron garage. These buildings have been demolished with no visible remnants.

Across the driveway into the Veyo plant, and southwest of the powerhouse, is an old barn. Built from the staves from a wooden pipeline, it was never used in conjunction with the power plant, according to a telephone interview with former operator Ivan Hunt. Hunt, who worked at the Santa Clara hydroelectric plants for 43 years, stated that the barn was built by a company employee who owned the land, but the structure was never used by the power company. The barn is not counted as an element in the historic district.

SANTA CLARA NO. 2 (Sand Cove)

8. Conduit

After leaving the Veyo powerhouse, water for Santa Clara No. 2, the facility at Sand Cove, again passes into an open ditch. This ditch runs in a westerly direction, following the contours of the canyon wall on the north or west side of the Santa Clara River for about 4,500 ft. before reaching an inverted siphon, called the "U-pipe." This siphon, made of welded steel pipe, carries the water due south, down the side of the canyon (dropping about 100 ft. in elevation), under the Santa Clara River, and up the other side of the canyon. At the place where the U-pipe passes under the river, it has an apron on the downstream side made of reinforced concrete. This apron prevents water from undermining the pipe. On either end of the U-pipe is a small, open, concrete headworks. The U-pipe was built during the late 1930s or early 1940s, apparently replacing an earlier structure that carried the water across the Santa Clara River.

After reaching the bench on the south or east side of the Santa Clara River, the water is passed from the U-pipe into another canal dug into the earth. This canal, following the contours of the sloping bench south of Veyo, runs in a southeasterly direction

for about 26,000 ft. (approx. 5 miles) before reaching the Upper Sand Cove Reservoir (described below).

From the Upper Sand Cove Reservoir, the water is passed into a welded steel pipe which traverses the landscape for about 14,000 ft. (approx. 2.65 miles), resting on saddles made of stone rubble. At the end of this pipe is a tall steel standpipe. Originally, water from the Upper Sand Cove Reservoir was carried in a wood stave pipeline. This wood pipe was removed during the late 1930s or early 1940s, and possibly into the late 1940s, and replaced with the current steel pipe.

The conduit for the Sand Cove plant, although it retains much of its integrity, has undergone some significant alterations outside the period of significance. The most important of these alterations include the installation of the U-Pipe and the replacement of the wood stave pipeline. The date of these changes is unclear, but a construction history of the Dixie Power Company and accounting records indicate that the structures had not been added up to December 31, 1938. Therefore, these alterations were made after the period of significance for the Santa Clara Hydros Historic District. In addition, they may have been made during the late 1940s (Ivan Hunt Interview). Because these changes occurred after the period of significance, they substantially alter the design and material integrity of the entire length of conduit. The Sand Cove conduit thus is excluded from the Santa Clara Hydros Historic District.

9,10. Dam

Two dams are associated with the Sand Cove plant. A 1932 engineering report calls the Upper Sand Cove reservoir the "Carter reservoir." Originally, the Carter Reservoir was formed by an earth-fill dam (no. 9) approximately 1,000 ft. in length. This dam, however, was located on unstable volcanic rock. Consequently, it leaked and so was never fully filled. Shortly after its construction, this dam was abandoned. Another dam (no. 10), a low, earth-fill structure also about 1,000 ft. long, was constructed (ca. 1928) on the west edge of the reservoir, roughly perpendicular to the original dam. This dam then impounded water from the canal leading from the Veyo plant. Plans were made to

renovate the original dam, but apparently these were never implemented. The reservoir now in use is called the Upper Sand Cove Reservoir. The steel pipe emerges from the Sand Cove Reservoir and then passes through the old dam. Both of these dams contribute to the historic district. The original structure, although it is no longer used, still illustrates its intended function. Along with the current Upper Sand Cove Reservoir dam, it retains integrity of design, setting, location, workmanship, materials, feeling, and association. Both dams comprise the Upper Sand Cove Reservoir Dams component of the Santa Clara Hydros Historic District.

11. Standpipe

The standpipe, which essentially serves as a surge tank, is about 6 ft. in diameter and about 70 ft. tall, and is made of welded steel. The standpipe, based on available documentation, appears to be original to the Sand Cove plant. It maintains integrity of design, setting, materials, workmanship, location, feeling, and association. This structure is a contributing feature in the Sand Cove powerhouse component of the Santa Clara Hydros Historic District.

12. Penstock

The penstock consists of a welded steel pipe about 2,060 ft. in length. There is a difference in elevation between the top and bottom of the penstock of about 350 ft. The penstock decreases in diameter, from 30 in., to 28 in., and then to 26. in. Parts of the penstock, especially where it passes underneath a road, is underground. The penstock appears to be original to the Sand Cove plant. It maintains integrity of design, setting, materials, workmanship, location, feeling, and association. This structure, part of the Sand Cove powerhouse compoment, contributes to the Santa Clara Hydros Historic District.

13. Powerhouse

In 1925, the Kemp Brothers, a local St. George concrete contracting firm, constructed the Santa Clara No. 3, Sand Cove plant. A small, simple building, the powerhouse at Sand Cove is a

one-story, rectangular-shaped poured-concrete structure with a slightly sloping, tarred roof. A concrete capped parapet wall rises above three sides of the roof line. Exposed rafter ends extend from the west side of the roof which has no parapet wall. At the building corners are flared buttresses. Windows are 2/2 double hung and exist singlely, in pairs, and in sets of three. The west facade contains two entrances, one with a single wooden door and the other with double wooden, 8-light garage doors. Another wooden door provides access to the building on the north side. All of the windows and doors are screened. The buried penstock enters the southeast corner of the powerhouse and exits from under the building into an open ditch on the west side. A wire fence encloses the station and the substation, just to the north of the powerhouse.

Inside the Sand Cove powerhouse is a Pelton wheel attached to a General Electric, 2,300 volt a.c. generator, with a small Westinghouse exciter attached. The Sand Cove plant is rated at 625 kilowatts. The powerhouse interior also features a modern switchboard, a small room for storing batteries (and also containing an old telephone booth), a governor unit for the turbines, and a gate valve and a needle valve for controlling the flow of water into the turbine. Two trusses support the roof. These are made of heavy wood beams, with steel rods serving as vertical tension members. Above the turbine-generator unit, these trusses support a small hoist.

The Sand Cove powerhouse is virtually unaltered since its construction. It retains integrity of design, setting, location, materials, workmanship, feeling, and association. It is the primary contributing feature of the Sand Cove component of the Santa Clara Hydros Historic District.

14. Switchyard

The Sand Cove switchyard consists of a modern steel switchrack and modern transformers. The switchyard, because it is of recent construction does not contribute to the Santa Clara Hydros Historic District.

15. Ancillary Structures

East of the powerhouse and across the dirt road is a small, rectangular, corrugated metal shed with a corrugated metal gable roof. Its windows and entrances are open and uncovered. In deteriorated condition, the building has been unused for some time and the current owners intend to demolish the structure. This structures is probably the corrugated metal shop building mentioned in a 1938 inventory of structures at Sand Cove. The building probably dates from the original construction of the Sand Cove plant. Although in deteriorated condition, the building still retains integrity of design, setting, location, workmanship, materials, feeling, and association. This building contributes to the historic district.

Other than this shed and the powerhouse, no other buildings exist at the Sand Cove site. Originally, three wood frame operators' cottages sat just north of the powerhouse. In the 1940s and 1950s, the houses were moved to Cedar City and other communities. The rock foundations of these residences are still visible. Having lost physical integrity, these structures do not contribute to the historic district.

SANTA CLARA NO. 3 (Gunlock)

16. Conduit

Conduit for the Gunlock plant begins at the Veyo powerhouse, where wastewater from the turbine is ejected into a canal. This canal, dug into the earth, is approximately 6,000 ft. long. The canal, following the north edge of Sand Cove Wash, leads to Lower Sand Cove Reservoir (see description of dam). From the Lower Sand Cove Reservoir, water is carried to the Gunlock penstock in a welded steel pipe approximately 3,000 ft. in length. The steel pipe rests on saddles made of stone rubble. This steel pipe, installed in the late 1930s or early 1940s, and perhaps even into the late 1940s, replaced the original wood stave pipeline.

The replacement of the wood stave pipeline with welded steel pipe compromises the integrity of the conduit for the Gunlock plant.

The date of this alteration is somewhat doubtful, but records indicated that it probably did not occur, or at least was not completed, until after 1939. Therefore, this section of conduit lacks integrity of materials and design and thus association. It does not included in the Santa Clara Hydros Historic District.

17. Dam

The Lower Sand Cove Reservoir is created by an earthen dam about 700 ft. long. This dam is unaltered and retains integrity of design, setting, materials, workmanship, location, feeling, and association. It is a contributing feature of the Lower Sand Cove Dam component of the the Santa Clara Hydros Historic District.

18. Standpipe

The steel pipeline described above ends at the top of the Gunlock penstock. At the top of the penstock is a steel standpipe 72 ft. tall. This standpipe acts as a surge tank. It retains integrity of design, setting, feeling, materials, workmanship, location, and association. It contributes to the Gunlock component of the Santa Clara Hydros Historic District.

19. Penstock

The Gunlock penstock consists of approximately 295 ft. of 20 in. pipe and 590 ft. of 18 in. pipe, all made of welded steel. The difference in elevation between the top and the bottom of the penstock is approximately 320 ft. As it traverses the side of the canyon on its way to the powerhouse, the penstock is set in concrete blocks or rests on top of concrete or rubble saddles. The penstock retains integrity of design, setting, feeling, materials, workmanship, location, and association. It contributes to the historic district.

20. Powerhouse

Constructed in 1925-1926, the powerhouse at Gunlock is a relatively simple, unadorned structure, very similar to Santa Clara no. 2, Sand Cove. While the lower story contains the

generating equipment, operators originally used the second story as a residence. Rectangular in shape, the two-story, poured concrete building has a stuccoed exterior and an asphalt-shingled gable roof. At the corners are flared buttresses. Exposed rafter ends protrude from under the eaves and a metal ventilator caps the structure. In the upper story, the windows are paired 2-light casements while the lower story contains single or paired 2-light slider or 2-light hopper windows. All windows are screened and have concrete sills. An entrance facing south has a 9-light door with 6/4 double hung sidelights, which are apparently new. In the east side of the upper story are two 1-light entrances with screen doors. A wood stairway and porch providing access to the doors has been removed. Below the doors is a low, poured-concrete addition which has an asphalt-shingled shed roof stuccoed exterior, exposed rafter ends and 2-light awning windows. The penstock enters the powerhouse through this addition. On the north side of the building is the substation. Enclosing the powerhouse and substation is a chain-link fence which rests on a rocked embankment on the east side of the powerhouse. The tailrace exits the powerhouse from its west wall, flows under a concrete slab covering the driveway and is discharged into an open ditch. Extending from the building and paralleling the tailrace is a concrete wall.

Equipment at Gunlock includes a Pelton wheel connected to a General Electric, 2,300 volt, 750 kilowatt a.c. generator. This unit was installed in 1939. A bank of batteries adjacent to the turbine-generator unit serves as a d.c. exciter for the generator. A gate valve and a needle valve control the flow of water to the turbine, which is regulated by a hydraulic oil governor. Behind the turbine-generator unit is a modern switchboard. Running the length of the Gunlock powerhouse interior is a 5-ton overhead travelling crane, made by the Cyclops Iron Works of San Francisco. The second floor of the Gunlock powerhouse originally was used as a dwelling for the plant operator.

The Gunlock powerhouse has undergone relatively minor alterations, most notably the removal of the rear stairway and second-story porch. Despite such changes, overall the powerhouse retains integrity of design, setting, feeling, materials, location,

workmanship, and association. The powerhouse is a contributing feature of the Santa Clara Hydros Historic District, and is the main feature of the Gunlock component of the district.

21. Switchyard

The Gunlock switchyard consists of a modern steel switchrack and modern transformers. Of recent construction, it does not contribute to the Santa Clara Hydros Historic District.

22. Ancillary Structures

The Gunlock station contains only one other structure. Just south of the powerhouse, next to the driveway, is a small, rectangular-shaped adobe brick building with a metal-covered gable roof and rock foundation. The window and door openings are boarded over. Presently unused, the building was erected in the 1930s for personal storage by an operator skilled in adobe masonry. This building contributes to the Santa Clara Hydros Historic District. Apparently, an adobe brick garage and another adobe brick shed were also constructed but have been demolished.

ORIGINAL SANTA CLARA NO. 3 and SANTA CLARA NO. 4 (La Verkin)

The stone powerhouse of the original Santa Clara No. 3 (called Santa Clara no. 1 in the old ordering system) built in 1917, is still standing, and is located just north of the town of Gunlock. This structure is now privately owned. The La Verkin plant, hydro No. 4, is still standing, and is located at the town of La Verkin. Neither of these facilities were included in the project which resulted in this nomination. Additional fieldwork and research might reveal their eligibility for the National Register.

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties: ___nationally x statewide ___locally

Applicable National Register Criteria x A ___B x C ___D

Criteria Considerations (Exceptions) ___A ___B ___C ___D ___E ___F ___G

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
Industry	1920-c.1930s	1920, 1925, 1926,
Engineering		c.1928, 1930s.

Cultural Affiliation
n/a

Significant Person
n/a

Architect/Builder
unknown/unknown

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

(see continuation sheet)

x See continuation sheet

The Santa Clara Hydros (individually and as a district) are significant under Criteria A and C, within the local context. Under Criterion A, the plants are significant because of their associations with hydroelectric power development in Gunlock, Veyo, and the counties of Washington and Iron. The Dixie Power Company was organized in 1917 to supply electricity to towns in Washington County. With four hydroelectric plants built between 1917 and 1929, Dixie Power Company introduced electricity to nearly all the major towns of Washington County as well as Zion National Park. The company also supplied power to towns in Iron County. The Santa Clara Hydros are significant under Criterion C as well, because they embody the distinctive characteristics of small hydroelectric power plants designed to operate on high heads and a mininal amount of water. In order to generate electricity, it was critical that the Dixie Power Company design its plants to meet limitations imposed by the desert environment of the upper Santa Clara drainage. A severely limited supply of water and a natural topography of plateaus, canyons, and washes necessitated the construction of high-head hydroelectric plants. High-head plants were the most common type of power development in Utah during the first quarter of the twentieth century.

Formation of the Dixie Power Company and the installation of the Santa Clara Hydros followed the establishment of farms around what is now the town of Veyo. Around 1911, James L. "Uncle Jim" Bunker, his wife Katherine, Uncle Jim's brother Stephen, and John Hunt established homesteads in the area. Rainfall in the vicinity of Washington County averaged less than 10 in. per year, so Uncle Jim Bunker and his neighbors depended on water from the Santa Clara. In order to bring water from the river bottom up to the

bench land on which they lived, Uncle Jim and his neighbors decided to build a ditch, which they completed in 1914.

While working on the ditch, Uncle Jim Bunker came up with the idea of using its water for generating electricity. The prospects seemed especially promising since water returning to the Santa Clara from the ditch dropped about 400 ft. over a short distance, ideal conditions for a high-head plant. Bunker began to solicit advice from people familiar with hydroelectric power technology. Eventually, through the intercession of Albert Miller and Bert Pike, Bunker presented his idea for a power plant to A.L. Woodhouse, an engineer working for L.L. Nunn's Telluride Power Company. Woodhouse was also Manager of the Beaver River Power Company as well as President and General Manager of the Southern Utah Power Company. Woodhouse considered Uncle Jim's proposition and decided to participate in the project. Woodhouse's interest initiated a connection between the Southern Utah Power Company and hydroelectric power development along the Santa Clara River.

Plans were then made to build the power plant and construction work was started. A site for a powerhouse was chosen upstream from the town of Gunlock. The Veyo Irrigation Company and the Southern Utah Power Company made agreements and signed contracts to enlarge the ditch for power purposes. Work began in 1916. Most of the construction workers were men who lived around Veyo. In November of 1916, a small, municipally-owned hydroelectric plant in St. George was purchased. On January 20, 1917, the Dixie Power Company was organized with A.L. Woodhouse as President and General Manager. Prior to the formation of the Dixie Power Company, it is unknown exactly who or what corporate entity was responsible for financing the early development work, especially the acquisition of the municipal plant in St. George.

By June of 1917, the stone masonry powerhouse (the original Santa Clara No. 3) near Gunlock was completed and placed in operation. The Dixie Power Company began sending electricity over transmission lines to St. George and Enterprise. At that time the St. George plant was closed and dismantled. By the end of 1917, the Dixie Power Company extended its distribution system to the towns of Hurricane, Washington, La Verkin, and Tocquerville.

Over the next several years, the Dixie Power Company expanded its generating capacity and extended its service to even more towns. In 1919, the company acquired the Cedar Electric Company, closed down that firm's small hydroelectric plant, and built a transmission line to Cedar City, about 60 miles northeast of Gunlock in Iron County. Dixie Power Company also began construction of a second hydroelectric plant (Santa Clara no. 1) just upstream from Veyo. Dixie Power began operating this plant in 1920. Ivan Hunt, a former operator of the Santa Clara Hydros, recalled hearing that a St. George stonemason built the Veyo powerhouse. Following completion of the Veyo facility, service was extended north from Cedar City to the Parowan Valley, where electricity was used for irrigation pumps. Between 1921 and 1923, Dixie Power initiated service to mining operations at Desert Springs and Iron Mound, west of Cedar City in Iron County.

Between 1925 and 1929, the Dixie Power Company almost entirely rebuilt its physical plant in the interests of meeting the rising demand for electricity in its vicinity. In 1925, the company decided to move Santa Clara No. 3 downstream to the town of Gunlock. A new powerhouse was built at Gunlock in 1925-1926. The old powerhouse and its water delivery system were abandoned. In 1925 a third plant, Santa Clara No. 2 (Sand Cove), was built between the plants at Veyo and Gunlock. All three facilities were joined by a single water delivery system (consisting of dams, conduit, standpipes, penstock, weirs, reservoirs, etc.), beginning above the powerhouse at Veyo and ending at the tailrace of the Gunlock facility. A subsidiary, the Red Mountain Water Company, was organized to develop the new water delivery system, which is still in place today (although subsequently altered). Ivan Hunt recalled that Kemp Brothers, a St. George contractor specializing in concrete, built the concrete No. 3 (Gunlock) and No. 2 (Sand Cove) powerhouses. Santa Clara No. 2 went into operation in 1925 and Santa Clara No. 3 began generating power the following year.

All three of Dixie Power Company's plants were of the high head type, with penstocks delivering a relatively small amount of water at high velocity to Pelton wheels. The location of all three facilities on what was essentially a single water delivery system underscored the fact that all three facilities were operated together. Santa Clara No. 2 at Sand Cove, for instance, was used

to regulate demand on all three plants. While the plants at Gunlock and Veyo produced a relatively steady amount of electricity, the Sand Cove unit increased production to meet demand during peak load hours.

Following construction of the new Santa Clara plants, Dixie Power further extended its service to Zion National Park as well as the communities of Springdale, Rockville, Virgin, New Harmony, Ivins, and Pintura, all in Washington County. In addition, in 1927, Dixie Power interconnected with the Parowan Municipal plant and with lines of the Telluride Power Company.

Despite improvements in generating capacity and interconnection with other companies, Dixie Power could still not keep up with demand. Consequently, in 1928-1929, the company acquired an interest in a diesel-powered generating plant at Cedar City. At the same time, Dixie Power arranged with the La Verkin Canal Company for a supply of water for another hydroelectric power plant, called "Hydro No. 4." Built in 1924, the La Verkin plant featured a brick and concrete powerhouse situated in the canyon of the Virgin River, below the La Verkin bench and the town of La Verkin.

In 1930, the Washington Gas and Electric Company acquired the Dixie Power Company. In 1932, Dixie Power Company's name was changed to the Southern Utah Power Company.

Throughout the 1930s, 1940s, and 1950s, Southern Utah Power continued to make changes to its generating facilities, including the Santa Clara Hydros. In 1933, the company purchased a diesel generating plant at Kanab. In 1934, the generating equipment in No. 4 powerhouse was replaced, and in 1939 a new Pelton Wheel and generator were installed in the Gunlock plant and a new generator was put in at Veyo. Beginning in the late 1930s, much of the conduit for the Santa Clara Hydros was replaced. Besides changing generating equipment and installing new conduit, Southern Utah Power made other, more minor modifications to its facilities. For instance, Ivan Hunt recalled that during the 1930s, Joseph Neilsen, an operator at the Gunlock powerhouse, built several small storage sheds adjacent to the facility. Because Neilsen came from a family of adobe masons, he built the sheds out of

adobe. According to Hunt, Neilson used the sheds for "personal storage." After 1938--and probably during the 1940s or 1950s, according to Hunt--three operator's dwellings at the Sand Cove powerhouse were sold and moved from the site. Two houses at the Veyo facility have also disappeared.

After the late 1930s, the Santa Clara Hydros were taken over by the California-Pacific Utilities Company. During the early 1980s, Utah Power and Light acquired the plants and has operated them since that time. Although the plants have undergone some modifications since their construction, they still are outstanding examples of high-head hydroelectric plants dating from the 1910s and 1920s, and they still represent an important part of the history of hydroelectric power development in Washington County.

Because of the additions made to the Santa Clara Hydros after 1927, the period of significance for the Santa Clara Hydros extends beyond the period outlined in the multiple property nomination form. These additions did not alter the overall character of the Santa Clara plants, but they were important because they represented the ongoing attempts of a relatively small power company to make its small system of hydroelectric power plants more efficient and reliable.

9. Major Bibliographical References

Previous documentation on file (NPS):
___preliminary determination of individual listing (36 CFR 67) has been requested
___previously listed in the National Register
___previously determined eligible by the National Register
___designated a National Historic Landmark
___recorded by Historic American Buildings Survey # _____
___recorded by Historic American Engineering Record # _____

x See continuation sheet

Primary location of additional data:
x State Historic preservation office
___Other State agency
___Federal agency
___Local government
___University
x Other
Specify repository:
Utah Power and Light Company

10. Geographical Data

Acreage of property 22.1 acres

UTM References

	Zone	Easting	Northing		Zone	Easting	Northing
A	1/2	2/5/5/7/6/0	4/1/2/9/8/8/0	B	1/2	2/5/5/5/2/0	4/1/2/9/9/4/0
C	1/2	2/6/3/8/5/0	4/1/3/7/1/0/0	D	1/2	2/6/1/3/6/0	4/1/3/1/4/1/0

x See continuation sheet

Verbal Boundary Description

x See continuation sheet

Boundary Justification

x See continuation sheet

11. Form Prepared By

name/title Mark Fiege/Janet Ore, Consulting Historians
organization for Utah Power and Light Co. date November 1988
street & number 144 South 900 East #10 telephone (801) 532-5456
city or town Salt Lake City state Utah zip code 84102

Ashworth, Paul P. "Report on Hydraulic Equipment and Apparatus of the Dixie Power Company, Cedar City, Utah," 18 April 1932. Santa Clara Projects File, FPC Renewals File Case, Cadastral Department, Utah Power and Light Company.

Gilliam, Lucinda R./United States Department of Energy. Inventory of Power Plants in the United States--December 1979. Washington: U.S. Government Printing Office, 1980.

Hunt, Ivan. Telephone Interview with Mark T. Fiege. 17 August 1988.

Southern Utah Power Company. "History - 1917-1938." Santa Clara Projects File, FPC Renewals File Case, Cadastral Department, Utah Power and Light Company.

Southern Utah Power Company. "Original Cost as Determined by Analysis of the Records as of December 31, 1938." Santa Clara Projects File, FPC Renewals File Case, Cadastral Department, Utah Power and Light Company.

Southern Utan Power Company. "Statement F -- Statistical Information Pertaining to Generating Plants." Santa Clara Projects File, FPC Renewals File Case, Cadastral Department, Utah Power and Light Company.

Washington County Daughters of Utah Pioneers. Under Dixie Sun: A History of Washington County by Those Who Loved Their Forebears. N.p.: Washington County Chapter, Daughters of Utah Pioneers, 1950.

"Western Hydroelectric Transmission Developments." Journal of Electricity, Power, and Gas 34 (5 June 1915): 441-473.

Acreage of property:

Veyo Component: .4 acre

Sand Cove Dams Component: 11.9 acres

Sand Cove Powerhouse Component: 5.8 acres

Lower Sand Cove Dam Component: 2.9 acres

Gunlock Powerhouse Component: 1.1 acres

Total acres: 22.1

UTM References:

E - 12/261080/4131330
F - 12/261090/4131670
G - 12/258800/4129480
H - 12/258220/4129340

Verbal Boundary Description:

Veyo Component:

From a point where the Veyo penstock crosses the north edge of the Veyo canal, proceed northwest along the penstock 12 ft. to point of beginning; then proceed northeast along a lone parallel to the north wall of the Veyo powerhouse 75 ft. to a point; then proceed southeast along a line parallel to the east wall of the Veyo powerhouse 150 ft. to a point; then proceed southwest along a line parallel to the south wall of the Veyo powerhouse 115 ft. to a point; then proceed northwest along a line parallel to the west wall of the Veyo powerhouse 150 ft. to a point; then proceed northeast along a line parallel to the the north wall of the Veyo powerhouse 40 ft. to point of beginning.

The boundary of the Veyo component of the Santa Clara Hydros Historic District encompasses the buildings, structures, and grounds associated with the operation of the Veyo powerhouse.

Upper Sand Cove Dams Component

From a point on the north end of the Upper Sand Cove Reservoir, proceed directly north 50 ft. along a line to point of beginning; then proceed directly east along a line 100 ft. to a point; then proceed directly south along a line 1000 ft. to a point; then proceed directly east along a line 800 ft. to a point; then proceed directly south along a line 200 ft. to a point; then proceed directly west along a line 1100 ft. to a point; then proceed directly north along a line 1200 ft. to a point; then proceed directly east along a line 200 ft. to the point of beginning.

The boundary of the Upper Sand Cove Dams component of the Santa Clara Hydros Historic District was chosen because it encompasses the dams associated with the operation of the Upper Sand Cove Reservoir.

Sand Cove Powerhouse Component

Beginning at a point on the west side of the Sand Cove tailrace 30 ft. from the south wall of the Sand Cove powerhouse, proceed northwest along a line parallel to the south wall of the Sand Cove powerhouse 150 ft. to a point; then proceed northeast along a line parallel to the west wall of the Sand Cove powerhouse 300 ft. to a point; then proceed east-northeast along a line parallel to the Sand Cove penstock 50 ft. to a point; then proceed southeast along a line perpendicular to the Sand Cove penstock 200 ft. to a point; then proceed east-northeast along a line parallel to the Sand Cove penstock 1900 ft. to a point; then proceed southeast along a line perpendicular to the Sand Cove penstock 100 ft. to a point; then proceed west-southwest along a line parallel to the Sand Cove penstock 2000 ft. to a point; then proceed southwest along a line parallel to the east wall of the Sand Cove powerhouse 150 ft. to a point; then proceed northwest along a line parallel to the south wall of the Sand Cove powerhouse 100 ft. to point of beginning.

The boundary of the Sand Cove powerhouse component encompasses those buildings and structures directly associated with the operation of the Sand Cove powerhouse.

Lower Sand Cove Dam Component

From a point directly east of the gate valve on the Gunlock conduit, just below the Lower Sand Cove Dam, proceed directly west 25 ft. to point of beginning; then proceed directly north along a line parallel to the axis of the Lower Sand Cove Dam 150 ft. to a point; then proceed directly east along a line perpendicular to the axis of the Lower Sand Cove Dam 150 ft. to a point; then proceed directly south along a line parallel to the axis of the Lower Sand Cove Dam 850 ft. to a point; then proceed directly west along a line perpendicular to the axis of the Lower Sand Cove Reservoir 150 ft. to a point; then proceed directly north along a line parallel to the axis of the Lower Sand Cove Dam 750 ft. to the point of beginning.

The boundary of the Lower Sand Cove Dam component of the Santa Clara Hydros Historic District was chosen because it encompasses the dam associated with the operation of the Lower Sand Cove Reservoir.

Gunlock Powerhouse Component

Beginning at a point 75 ft. directly south of the south end of the roof crest of the Gunlock powerhouse, proceed west along a line parallel to the south side of the Gunlock powerhouse 35 ft. to a point; then proceed northwest along a line parallel to the west wall of the Gunlock powerhouse 50 ft. to a point; then proceed west along a line parallel to the south wall of the Gunlock powerhouse 40 ft. to a point; then proceed northwest along a line parallel to the west wall of the Gunlock powerhouse 30 ft. to a point; then proceed east-northeast along a line parallel to the north wall of the Gunlock powerhouse 40 ft. to a point; then proceed northwest along a line parallel to the west side of the Gunlock powerhouse 45 ft. to a point; then proceed east along a line parallel to the north wall of the Gunlock powerhouse 120 ft. to a point; then proceed south along a line perpendicular to the Gunlock penstock 45 ft. to a point; then proceed east-southeast along a line parallel to the Gunlock penstock 720 ft. to a point; then proceed south along a line perpendicular to the Gunlock penstock 50 ft. to a point; then proceed west along a line

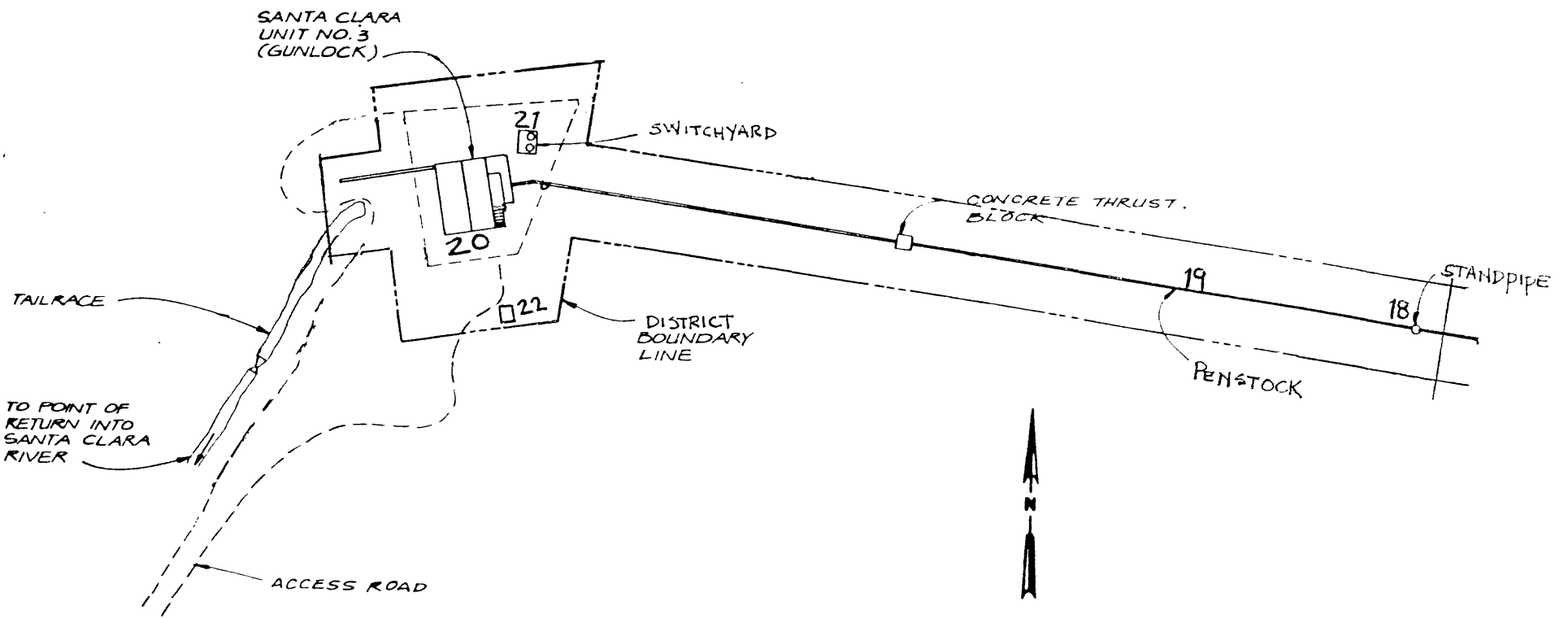
parallel to the Gunlock penstock 720 ft. to a point; then proceed south along a line perpendicular to the Gunlock penstock 50 ft. to a point; then proceed west along a line parallel to the south end of the Gunlock powerhouse 50 ft. to point of beginning.

The boundary of the Gunlock Component of the Santa Clara Hydros Historic District encompasses those buildings and structures directly associated with the operation of the Gunlock powerhouse.

Boundary Justification:

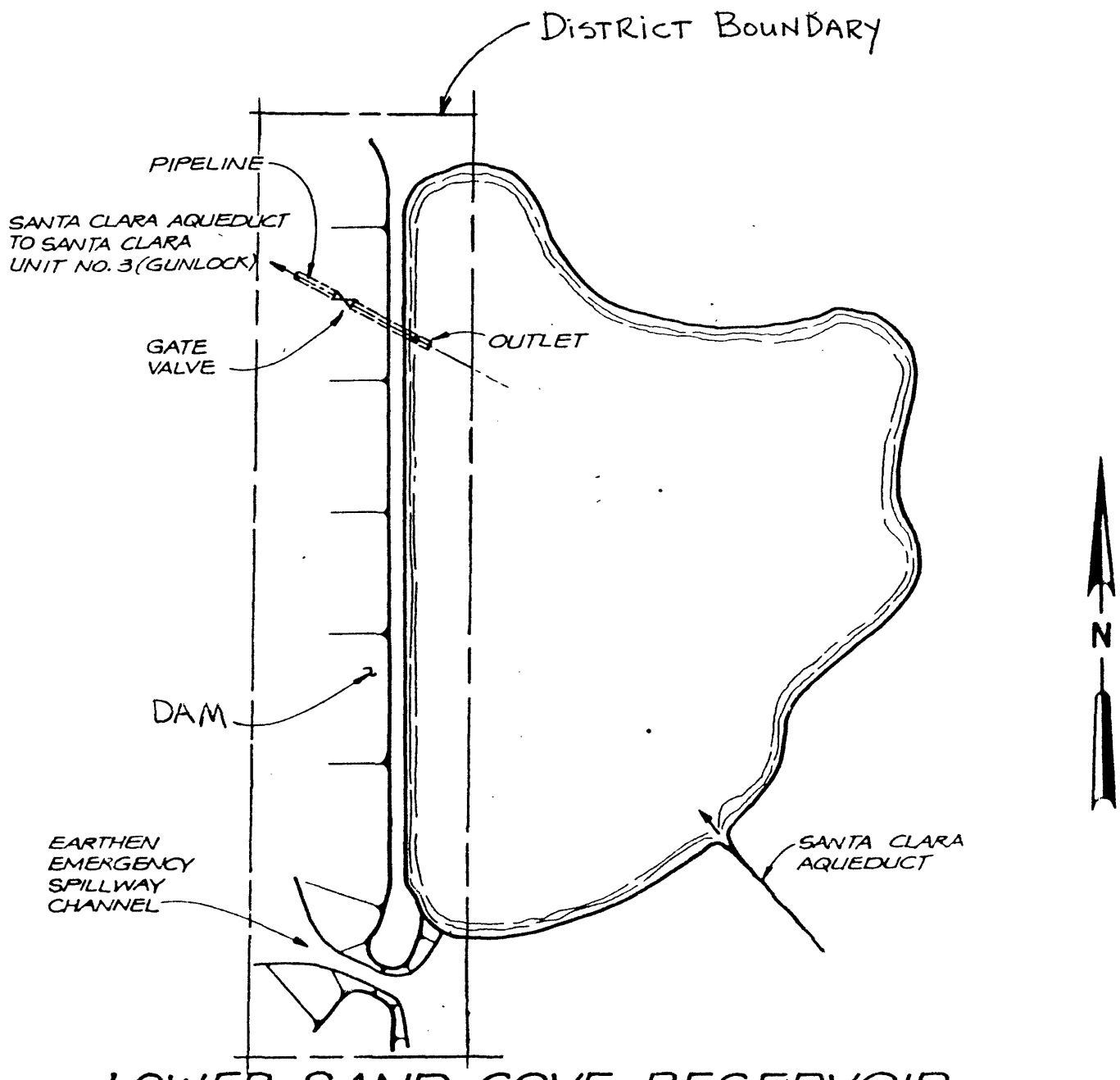
There are no convenient property boundaries that might serve as boundaries for the various components of the Santa Clara Hydros Historic District. Given this, boundaries were selected that encompass the setting of the buildings and structures in each component. The general setting is defined as that ground which is generally used to operate and maintain the structures in each component.

A discontiguous district is justified in the case of the Santa Clara Hydros because all are located on a linear system of conduit most of which is not historic or lacks integrity. Yet each component contains a significant group of buildings and/or structures that retains integrity and illustrates a historic function. Furthermore, visual continuity in the case of the Santa Clara Hydros is not important--the intact resources are geographically separate and the intervening space lacks significance.



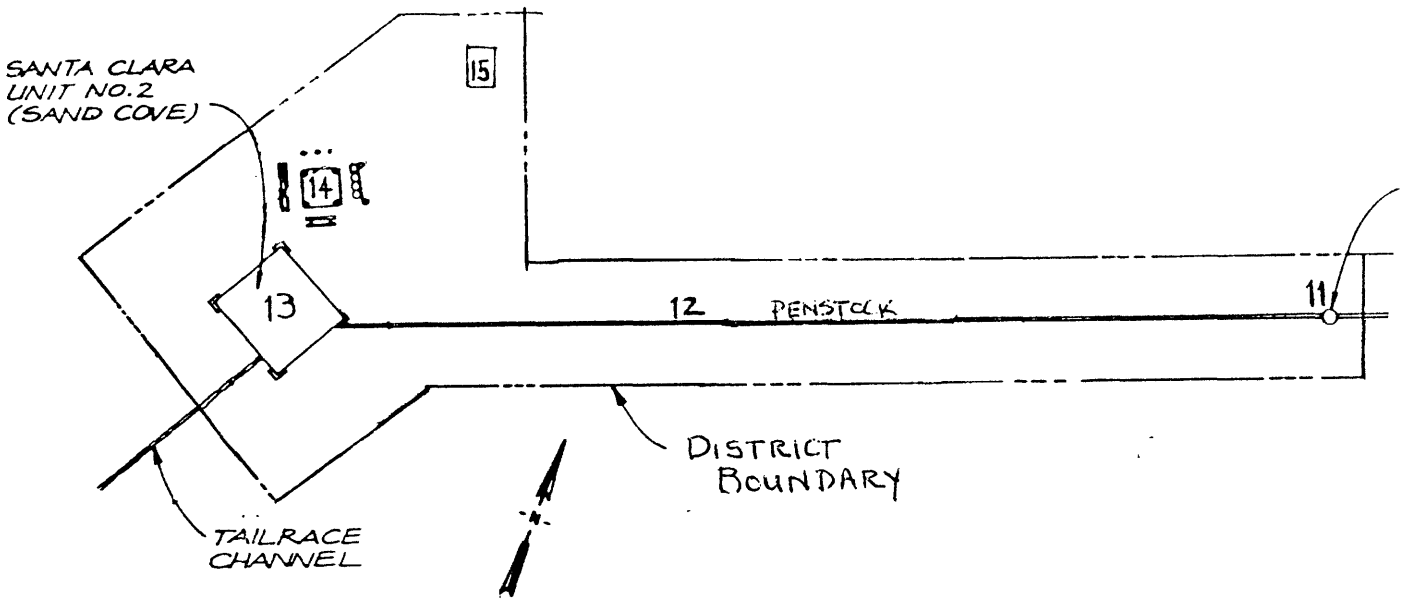
SANTA CLARA HYDROS
HISTORIC DISTRICT

GUNLOCK POWERHOUSE



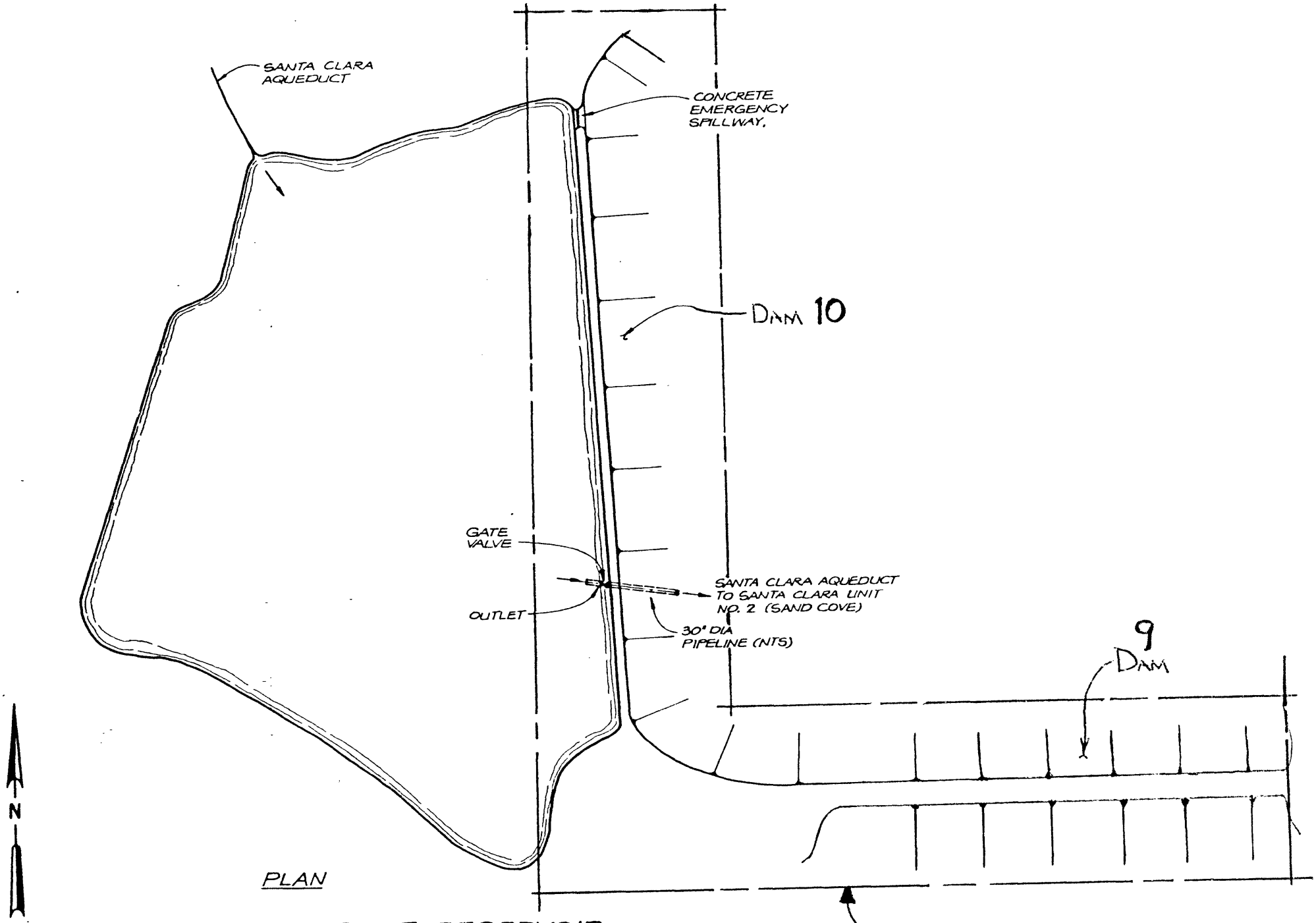
LOWER SAND COVE RESERVOIR

SANTA CLARA HYDROS HISTORIC DISTRICT



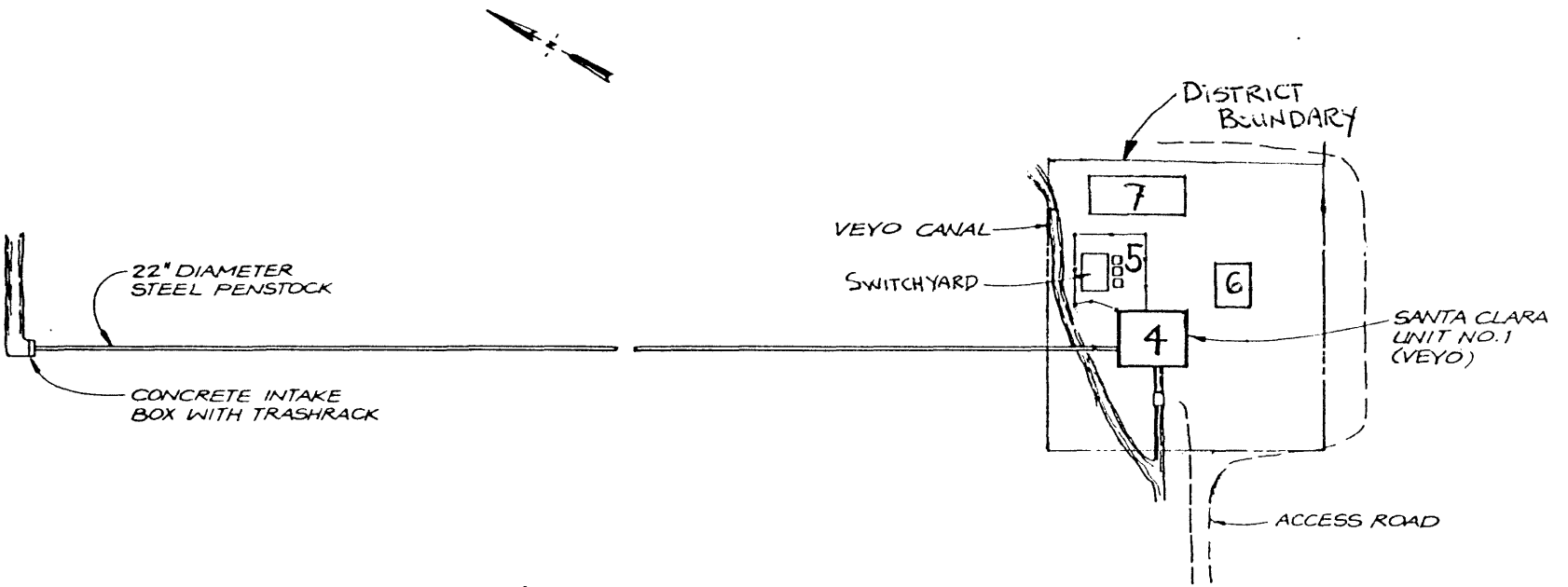
SANTA CLARA HYDROS
HISTORIC DISTRICT

SAND COVE POWERHOUSE

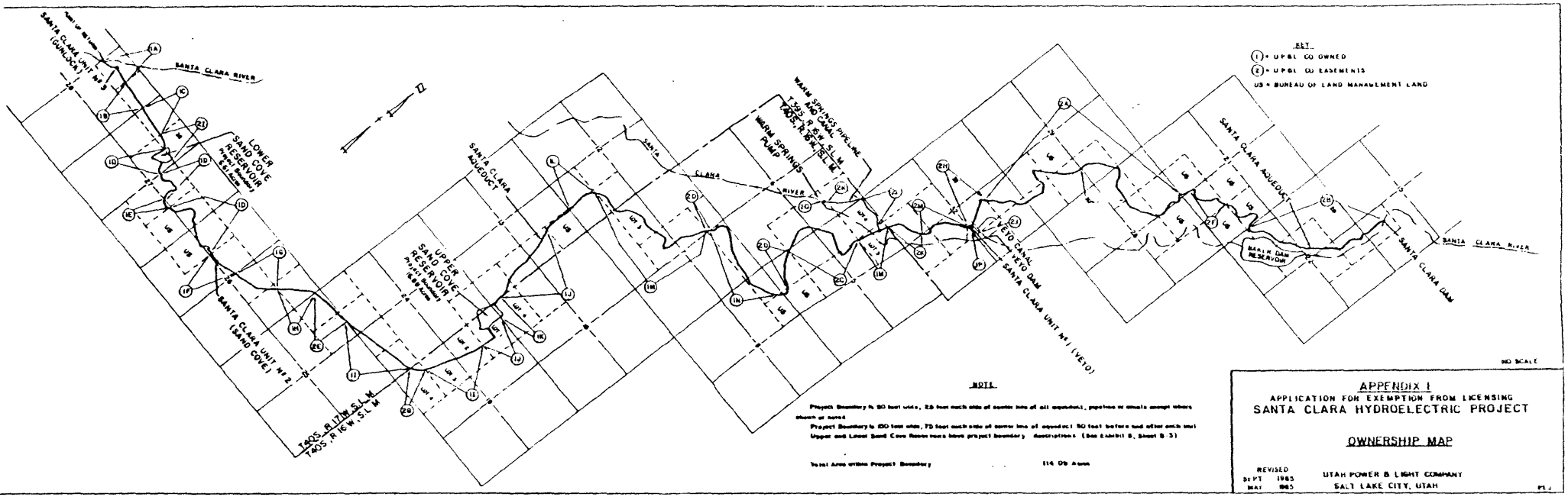


UPPER SAND COVE RESERVOIR

SANTA CLARA HYDROS HISTORIC DIST.



SANTA CLARA HYDROS
HISTORIC DISTRICT
VEYO POWERHOUSE



NOTE

Project Boundary is 50 feet wide, 25 feet each side of center line of all aqueducts, pipelines or canals except where shown or noted.

Project Boundary is 100 feet wide, 75 feet each side of center line of aqueduct 50 feet before and after each Upper and Lower Sand Cove Reservoirs have project boundary descriptions. (See Exhibit B, Sheet B-3)

Total Area within Project Boundary 114 Ob Acres

APPENDIX I

APPLICATION FOR EXEMPTION FROM LICENSING

SANTA CLARA HYDROELECTRIC PROJECT

OWNERSHIP MAP

REVISED
SEPT 1985
MAY 1985

UTAH POWER & LIGHT COMPANY
SALT LAKE CITY, UTAH

PL-1

Santa Clara Photograph Log:

Santa Clara Hydros Historic District Photographs
near Veyo, Utah
Mark T. Fiege, photographer
July 1988
orginal negative at Utah SHPO

Photo #:

1. Veyo powerhouse (no. 4), view to northwest.

2. Veyo powerhouse (no. 4), with switchyard (no. 5) in background, and building nos. 6 and 7 to right, view to north.

3. Veyo powerhouse (no. 4), view to northeast.

4. Upper Sand Cove Reservoir dam (no. 10), view to north.

5. Same, view to northeast, looking toward Veyo Volcano.

6. Sand Cove powerhouse (no. 13) on right, with switchyard (no. 14), foundation of old operator's residence, and shed (no. 15), to left of photo, view to southeast. Standpipe (no 11) on horizon.

7. Sand Cove powerhouse (no. 13), view to southeast.

8. Sand Cove penstock (no. 12), view to west.

9. Sand Cove powerhouse (no. 13), view to west, also showing switchyard (no. 14).

10. Interior of Sand Cove powerhouse (no. 13), view to south.

11. Lower Sand Cove Reservoir dam (no. 17) (cutting diagonally across center of photo), view to southwest.

12. Gunlock powerhouse (no. 18), view to east.

13. Gunlock powerhouse (no. 18), adobe shed (no. 22), view to southeast.

14. Gunlock powerhouse (no. 18), penstock (no. 19), switchyard (no. 21), view to northwest.

15. Adobe shed (no. 22), view to southeast.