

10 MARKLEY COVE

10.1 Waste Water Systems

Ponds:

There are two evaporation ponds for this resort located at the top of a steep, nearly inaccessible hill. Even though the ponds were dry (moist), the maintenance man said it was the wettest that he had ever seen it. Weeds are growing extensively in both ponds.

Currently the wastewater is directed into only one pond. The State Water Resource Control Board wanted one end of line capped so water would always feed into just one pond, with overflow to the other pond.

The force mains connecting lift stations to these ponds are suspected of leaking and should be tested and repaired if needed. Almost no flow is reaching the ponds, although the pumps run almost constantly. The only way that this can happen is if the force main is losing all of the pumped flow through leaks.

It is impossible to determine whether the ponds are adequately sized because the wastewater is not reaching the ponds. As a minimum, weed removal and clay lining of the ponds would be necessary before the ponds could be placed back into service.

Lift Stations:

There is one lift station for 50 hookups.

LS 1: This lift station directs the wastewater from the trailers to the main lift station. It has two single stage rotary Moyno pumps. There are no alarms for this station. It uses a lead and lag set-up.

Main LS: This is the main pump house for this facility. There are two 5HP Moyno pumps (with one backup pump) operating in a lead/lag arrangement. It has pressure monitors that are checked weekly to notify the maintenance staff of a force main plug. It also has an additional flow monitor. During the winter months, there are reportedly some electrical reliability problems.

House Boat LS: This lift station is manually operated to pump out the houseboats, using a Sears utility water pump, to a holding tank. A Moyno pump is used to pump the sewage from the holding tank to the main lift station. The “force main” is a flexible hose that is severely worn. The end of the hose is uncapped.

Office LS: Two submersible pumps (1 hp and 1/3 hp) are located at this pump station. The building is vented but had no alarms.

The lift stations was found to be unacceptable and would require additional reliable pumping capacity, new instrumentation and controls, a functional alarm system, and standby power facilities in order to be adequate. New lift stations should be constructed using new equipment and materials.

10.2 Potable Water Systems

Treatment Plant:

This resort has a different style treatment facility than the other resorts. Instead of pressure filters, this facility uses concrete settling tanks with mixed media filters, which are open on top. There is a local alarm for chlorine levels, but not turbidity. The filters are backwashed from the storage tank.

Storage Tanks:

There is only one storage tank for the 50 hookups at this resort. It is an old, 6,000-gallon brewery tank purchased from a brewery and installed more than 10 years ago. Lately the tank has reportedly been overflowing and leaking. The float system is not working. The feed line and backflow line are the same. The resort checks the chlorine levels in the treatment process daily but not the residual levels. Napa County tests the water monthly.

10.3 Roads/Parking Lots

Pavement Section:

As indicated in Table 8, all roads are in extremely poor condition. With the exception of a short area near the entry it appears that most of the pavements are less than an inch thick and consist of either an asphalt macadam or penetration asphalt layer. At best, most of the existing pavements could serve a base for the construction of a new pavement.

For the 300 feet or so closest to the entry it would be possible to repair existing areas of alligator cracking and then install a 3-inch thick asphalt overlay. In all other areas we recommend proof rolling all pavement areas and removing any sections that pump or weave. We then recommend placing a thin leveling course of aggregate base over the existing pavement and constructing new asphalt pavements that are at least three inches thick in collector areas and 2 inches thick in secondary areas.

Geometry:

Virtually all roads are two way roads, with little opportunity to create one-way loops. In most areas between the entrance and sampling location number C7 (Plate 8) the existing road is extremely narrow but the road bench is wide enough to permit widening to accommodate 2-way

traffic. (It would then no longer be possible to store boat trailers along the side of the road as is currently done).

North of sampling locations C8 and S9 the roads become extremely narrow (10 feet to 12 feet) with a steep cut slope on one side and mobile homes on the other. Not only is there no room to add a second lane, there is also virtually no space for parking. Cars presently park on the roadway, making fire truck access difficult or impossible. Although inspection of gravel roads was beyond the scope of our services we point out that there are many additional dwellings along the gravel road that continues to the north of this area. These are at significant risk due to the lack of fire truck access.

At the present time all improvements that are north of the where the road forks (approximately 100 feet south of locations C8 and S9) are substandard, and dwellings are at risk due to the lack of fire truck access. Bringing roads in this location up to even minimal safety standards will require either very expensive grading and new retaining walls; or else most trailers will need to be removed so that the road could be widened into the areas that are currently occupied by trailers. *We recommend closure of this area until a plan is developed to increase road width and parking.*

Although a survey was not performed, one area of extreme roadway curvature was noted between sampling locations C6 and C7. This curve will probably need to be flattened to allow fire truck access, or it may be desirable to close the road before reaching this curve. A fire truck turnaround will be necessary wherever this road terminates. An additional turnaround is necessary on the secondary road south of location S8 (see Plate 8). There are a couple of sharp corners at intersections that may require some modification to provide adequate fire truck access. Surveys will be necessary to determine the appropriate roadway and parking geometry in these areas. No areas of overly steep grades were noted. After geometric modifications and road reconstruction all roads should be striped and signed.

Other Considerations:

Because of the topography of this ravine where this development is located, most roadways have been constructed by excavating into already steep slopes, and placing fill on the downhill side of the road (also on very steep slopes). In some cases cut slopes are more than 30 to 40 feet high. Although no evidence of major landslides was observed, numerous areas of sloughing and soil pop-outs have occurred. It should be assumed that this entire area will require high maintenance and occasional removal of small landslides. There also appears to be a significant risk of larger landslides. We recommend a geologic survey of this area.

10.4 Electrical Systems

Most concession buildings have individual PG&E meters and are served by an overhead high voltage distribution system with pole-mounted transformers owned by PG&E that runs through

the marina. Some small concession buildings are sub-fed from larger buildings via a resort-owned distribution system. Electrical services ranged from poor to good. Internal wiring condition ranged from fair to good. Generally, the electrical systems are not code compliant, not adequate for current use, and not adequate for long term use. Several code violations were noted during the site inspection.

10.5 Boat Launch Facilities

The boat launch ramp is approximately 56 feet wide and extends 131 feet to the waterline. The ramp has a two launch lane capacity and a 15.6 percent average slope. It is constructed of a four-inch concrete slab with worn horizontal grooves. There are two boarding floats present. The ramp is experiencing erosion of the underlying material and deterioration of the concrete on its edge.

The ramp appears to be in fair to poor condition overall. There is significant erosion and concrete deterioration on one side and several cracks are present possibly due to shrinkage of the concrete. The ramp may be retained to support the houseboat operations, but repairs are recommended.

Slope protection should be placed on the left edge of the ramp to prevent future undermining of the concrete. The washed out sub-base material should be replaced and the concrete surface repaired. Curbs should be utilized to prevent vehicle traffic on the surrounding areas. Any medium to large sized cracks should be filled with epoxy.

10.6 Shoreline Developments

Retaining walls generally consisted of non-treated wood construction, with a number of masonry block walls. The wood walls were typically failing (outward tilting) due to inadequate lateral resistance design, and due to material deterioration. There were a few wood walls currently in good condition, such as those at Unit Nos. 50, 46, and 37. Such wood-constructed walls, however, will not have a long service life

The following is a listing of retaining structures that appear to be acceptable structures, having a reasonable design life, if properly maintained:

- Unit No. 25: a three-level masonry block wall
- Unit Nos. 38 through 42: masonry block wall having light rip rap toe protection
- Unit Nos. 44 and 45: concrete/masonry block wall

All other shoreline developments are not recommended for future use and should be removed.

10.7 Marinas and Fuel Systems

10.7.1 Dock Facilities

There are a total of nine docks at this resort. Docks #1 through #6 are connected in a string that extends approximately 950 feet into the water. There are a total of 129 covered berthing slips in this string. The resort has total of 173 slips.

Access to Dock #1 is possible by a newer 83-foot long aluminum gangway. The gangway is in very good condition. The gangway leads to an access float constructed of two-inch thick concrete decking, galvanized steel framing and plastic encapsulated floats. Dock #1 is 62 feet long and has a total of 10 slips. It is covered, has timber decking with galvanized framing and plastic floats. The roofing structure consists of galvanized steel framing with corrugated steel roofing.

Dock #2 is 19 feet long and contains two slips. The decking consists of two-inch thick concrete panels supported a galvanized steel frame. Plastic encapsulated pontoons provide buoyancy. The roofing structure here is identical to Dock #1

Dock #3 is 313 feet long and contains 50 berthing slips. The decking, dock frame and floats are identical to Dock #2. Hand winches are provided on either side of the main walkway at intervals to apply tension to the anchor lines.

Dock #4 follows next in the string. It is 181 feet in length and contains 28 berthing slips. Roofing and dock construction are identical to Docks #2 and #3.

Dock #5 provides berthing for the houseboats. The dock is 344 feet long and contains 39 berthing slips. The berths are 40 feet in length and are uncovered. The dock construction is identical to Docks #2 through #4.

Dock #6 is the final dock in the string and consists of the fish pen. It is uncovered and is 30 feet square in dimension. The precast concrete deck panels are used here with the same framing and floats.

Dock #7 consists of the fueling station, store and storage shed. Its decking consists of plywood in poor condition. Buoyancy is provided by a combination of plastic encapsulated floats and corrugated steel pipe pontoons. Access to the dock is provided by an aluminum elevated gangway.

Dock #8 and #9 are located on the northern end of the resort. Dock #8 is 154 feet long and contains 28 slips. There is an elevated gangway to the access float, which is 72 feet long. Personal watercrafts are berthed along the access ramp. Dock #9 is 97 feet long with 16 slips.

There is an elevated gangway here also, leading onto an access float which is 72 feet long. Both docks are covered and have diagonal timber decking and non-encapsulated open-cell foam flotation billets. The fingerfloats have greatly varying freeboards indicating deterioration of the floats, which can also be visually seen. The decking is splintered and coming up in some locations. The roofing framing is in poor condition.

The gas dock, boat repair dock and Dock #8 and #9 should not be retained for long term use due to their age and deterioration.

10.7.2 Fueling Services

There is one fuel dock present with one dispenser. There is a store located on the fuel dock with an attendant for issuing gasoline to boats. There is one storage tank on shore. The tank holds unleaded regular gasoline. The tank is piped to the dispenser on the dock. The dispenser has two hoses with service station type nozzles. A cartridge type fuel filter is located in the dock piping. The dispensers contain a product dispensing pump.

The storage tank is located on shore in an unpaved dirt area, which was excavated out of the side of a steep hill. The storage tank is an above grade, horizontal, cylindrical double wall tank that sits on two 4 ft x 8 ft concrete footings. The tank capacity is 5,000 gallons. The tank appurtenances include a primary vent, emergency vent, fill line, vapor recovery line and level gauge. Stick gaging is accomplished by removing a plug on an external vertical line. There is no ladder for access to the top of the tank. There is no leak detection monitoring system for the tank. There is no containment parking area for the tank truck.

The tank piping includes a 3-inch fill line with a 2-inch coupler, 3-inch vapor line with a 1-½ inch coupler and a 2-inch product dispensing line. There is no containment for this piping and no product dispensing pump at the tank. The product dispensing line is reduced to 1 ½ inch threaded piping and is routed toward the fueling dock. The piping is a mix of galvanized and black steel pipe. The piping is above grade on supports. It is routed under a gravel road through a 4-inch PVC casing pipe. A transition to hose is made and the hose is routed down the shoreline to the fuel dock where a hose reel is located. The hose reel is connected to 1 ½ inch galvanized threaded pipe on the dock and is routed under the dock to the dispenser. There is an emergency electrical shut off at the store on the fueling dock. Shut off valves are provided at the hose connections on the dock and at the dispenser.

The on-shore piping does not conform to the California Fire Code, Section 5202. The piping is 1 ½ inch Schedule 40 and is a combination of black steel and galvanized steel pipe with threaded joints. The black steel pipe is painted. Valves are bronze, threaded. The threaded joints are corroded and are not made up properly. Threaded pipe should be gauged to check for conformance to American Standard taper pipe threads before being made up. Bronze valves are a low melt material. This piping is suitable for potable water, but not for fuel piping. Pipe

supports are inadequate. Road crossings are unsatisfactory. The piping cannot be maintained under the road. The piping is routed over a dry grass area, which is a fire danger.

Suitable fuel piping for this service at the tank would be 1 ½ inch Schedule 80 black steel pipe with socket weld joints or threaded joints. The threaded joints would be gauged. Socket weld joints are preferred. Threaded joints would be used where necessary for equipment connections. Valves would be steel. The piping would be painted.

We recommend burying the on shore piping. It is a difficult overland route for above grade piping. Supporting the piping is difficult and the dry grasses represent a fire danger. Suitable material for buried piping would be double wall plastic pipe with leak detection.

The dock piping does not conform to the California Fire Code, Section 5202. The piping is 1 ½ inch Schedule 40 galvanized steel pipe with threaded joints. Valves are bronze, threaded. The threaded joints are corroded and are not made up properly. Threaded pipe should be gauged to check for conformance to American Standard taper pipe threads before being made up. Bronze valves are a low melt material. This piping is suitable for potable water, but not for fuel piping. Connection to shore piping is made with fuel hose. There is a hose reel on the first floating dock. Hose couplings are threaded. The piping is routed under the first floating dock and under the fuel dock and is not accessible.

Suitable fuel piping for this service would be flexible double wall pipe in a ducted metal jacket. Leak detection is not required. Final connection to the dispensers would be made in a sump box. This type of piping is specially designed for marina installations.

The dock dispenser has a fuel pump. We recommend putting a pump at the tank and replacing this dispenser. This would eliminate the possibility of siphoning fuel from the elevated storage tank, if a line broke.

10.8 Preliminary Environmental Assessment

A site visit was conducted to assess and photograph present site conditions. Ms. Linda Frazier, resort owner, was interviewed regarding site history and operations. Results of the interview and site observations are presented in the following table. Results of the preliminary environmental assessment are summarized in the following site observations table:

SITE OBSERVATIONS

General Observations	Remarks	Observed	Not
Current Use	Resort with store, boat facilities and mobile homes	X	
Past Use			X
Structures	Numerous buildings, restrooms, kiosks, office, store, boat ramp, docks, etc	X	
Terrain	Varied	X	
Interior and exterior observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products.		Observed	Not Observed
Hazardous chemical and petroleum products in connection with known use. Fill dirt from an unknown source.	Small quantities of paint	X	
Aboveground storage tanks (ASTs)	Gasoline AST.	X	
Underground storage tanks (USTs)			X
Odors			X
Pools of Liquid			X
Drums	Used oil recycled by SafteyClean	X	
Hazardous chemical and petroleum products in connection with unknown use.			X
Unidentified substance containers			X
Interior and exterior observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products.		Observed	Not Observed
Chemical storage or agricultural chemical mixing areas	Small quantities of Roundup	X	

Asbestos, and lead based paints	Not assessed.		
Polychlorinated biphenyls (PCBs)			X
Pits, Ponds, or Lagoons	Waste water ponds.	X	
Stained soil or pavement			X
Stressed vegetation			X
Hazardous Waste Storage	Used oil recycling	X	
Solid Waste			X
Waste Water		X	
Process waste water			X
Wells			X
Dry wells			X
Surface water	Waste water ponds	X	
Storm basins/catch			X
Interior and exterior observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products.		Observed	Not Observed
Storm drains			X
Drains and sumps			X
Septic system			X
Loading and unloading areas			X
Burned or buried debris			X

In summary, the environmental survey did not reveal recognized environmental conditions at the site. Small quantities of paint are stored and used on site. In addition, a used oil recycling bin is located on site. The used oil is collected by SafteyClean.