

F. Pipe Gallery

- The paint on the concrete walls is peeling. See the Architectural discussion for further recommendations.
- There is some minor cracking on the floor slab. No action is required at this time.
- A majority of the metal bases which are used as supports for equipment (pipe stanchions, bottom of the stair stringers, etc.) that are in direct contact with the concrete floor are corroded. These should be repaired by cutting and replacing all of the corroded bases of the pipe stanchions, stair stringers, etc. (S-19).



G. Areaway

- The exposed concrete and steel stairs appeared to be in good condition.
- There are a few minor cracks on the underside of the concrete ceiling slab and beams. No action is required at this time.

H. First Floor Spaces

All areas located on the first floor appear to be on good condition. No deficiencies were noted.

5.4.3 Sedimentation Basins

At the time of our assessment, we were only afforded access to Sedimentation Basin No. 2 as it was taken off-line for cleaning. Therefore, our comments and observations are limited to this structure only. Plant staff will be inspecting the remaining basins when they are drained for service and will compare their condition to Sedimentation Basin No. 2. The costs developed for

recommendations assume that all four basins have similar conditions and needs. Note that visibility during our inspection was fair within the tank with the only light provided from a floodlight, flashlight and an open hatch at the north end.

The Sedimentation Basins are long rectangular shaped concrete structures which are located to the east of the Control Building. The basins consist of a lower and upper level and include sludge collection equipment consisting of a chain and flight clarifying mechanism. The lower and upper levels are separated by a concrete slab that slopes from north to south. The design of a two tiered basin reduces the footprint of the structures.

5.4.3.1 Interior Observations

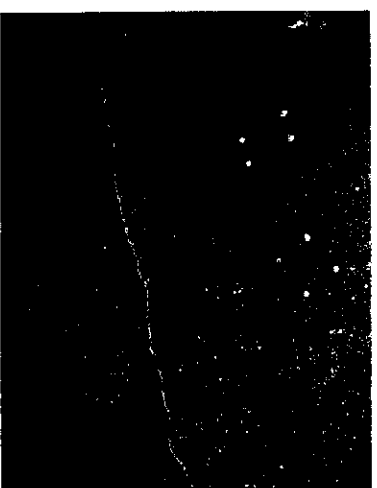
A. Top Level

- There is a series of approximately 14 one foot square spalls observed on the underside of the roof slab directly adjacent to the east wall of the basin. The spalls are spread out over the entire length of the tank and vary in size and depth. Several of them have been previously patched and the



patches appear to be in good condition. However, there is corroded reinforcing steel exposed in one of the spalls. The exposed areas of spalling should be repaired by filling the voids with a cementitious patching material such as SikaTop Plus 123 by the Sika Corporation (S-20).

- There are a series of approximately 9 cracks in the east-west direction on the underside of the roof slab. The cracks appear to be hairline and show efflorescence, which is a sign of previous leaking however the cracks were not leaking at the time of our inspection. One of the cracks at the north end extends into the west wall. This condition will only worsen if left unattended; all of the cracks in the roof deck should be repaired by pressure injection using an epoxy resin material such as Sikadur 35 Hi-Mod LV by the Sika Corporation (S-21).



- There is an expansion joint in the slab and walls approximately midway into the tank. The expansion joint sealant is in poor condition and some of the sealant in the roof slab is falling out and water is leaking through the walls in a number of locations. All of the expansion joint sealant should be removed and replaced and the worn expansion joint filler should be replaced as required (S-22).
- Water is leaking into the tank through a crack at the intersection of the south and west walls. The crack should be repaired by pressure injection using an epoxy resin material such as Sikadur 35 Hi-Mod LV by the Sika Corporation (S-23).
- Some of the walls were covered with rust colored debris that was flaking off in areas. The material is most likely residue left from the sedimentation process. The sedimentation basin walls should be pressure washed and re-inspected prior to proceeding with other repairs noted above (S-24).

- The sludge collector chains and blades appear to be in good condition however the collector drive sprocket shafts are corroded. Staff should periodically inspect and monitor the condition of the shafts each time the basins are drained for cleaning. The shafts should be replaced when warranted (S-25).



- Aside from the deficiencies stated above, the concrete appears to be solid and in good condition with no major exposed aggregate. We would normally expect to see exposed aggregate at the water/air interface.

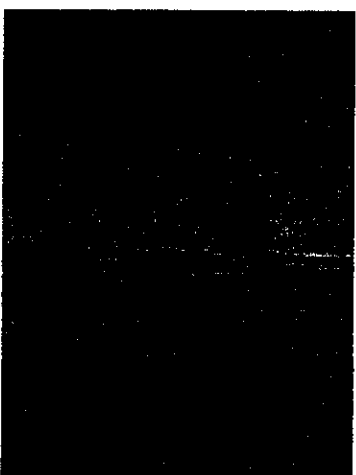
B. Bottom Level

- There were several inches of running water on the slab.
- The chains and blades appear to be in good condition however the collector drive sprocket shafts are corroded. Staff should periodically inspect and monitor the condition of the shafts each time the basins are drained for cleaning. The shafts should be replaced when warranted (S-25).
- There is an expansion joint in the slab and walls approximately midway into the tank. The expansion joint sealant is in poor condition and some of the sealant in the roof slab is falling out and water is leaking through the walls in a number of locations. All of the expansion joint sealant should be removed and replaced and the worn expansion joint filler should be replaced as required (S-22).
- There is also an expansion joint at the north end of the tank in the walls but there does not appear to be a corresponding joint in the top level slab. There is a crack that is leaking in the top slab that line up with the joints in the wall. The crack should be repaired by pressure injection using an epoxy resin material such as Sikadur 35 Hi-Mod LV by the Sika Corporation (S-26).

- Aside from the deficiencies stated above, the concrete appears to be solid and in good condition with no major exposed aggregate

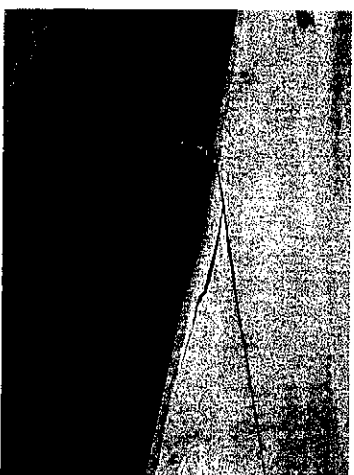
5.43.2 Exterior Top Slab Observations

- The top surface of the concrete slab appeared to be in good condition and appears to have been coated with a cementitious material. There were some minor depressions in the slab evident by the buildup of rain water.



- There was no sealant in the rubber expansion joints. All of the rubber expansion joint sealant should be removed and replaced (S-27).

- There is spalled concrete at the west end of the south expansion joint in the slab. This should be repaired by removing the damaged concrete and filling the void with a cementitious patching material such as SikatoP Plus 122 by the Sika Corporation (S-28).



- Aside from the deficiencies stated above, the concrete appears to be solid and in good condition with no major exposed aggregate.

5.4.4 Flocculation Basin No. 2

Similar to Sedimentation No. 2, at the time of our assessment, we were only afforded access to Flocculation Basin No. 2 as it was taken off-line for cleaning therefore our comments and

observations are limited to this structure. Access to the bottom of the structure was further limited as there was 2-3 feet of standing water in the basin so observations were made from a ladder through the hatch in the top slab. Plant staff will be inspecting the remaining basins when they are drained for service and will compare their condition to Flocculation Basin No. 2. The costs for any recommendations assume that all four basins have similar conditions. Note that visibility during our inspection was fair within the tank with the only light provided from a floodlight, flashlight and an open hatch at the north end of the basin.

The Flocculation Basins are square shaped concrete structures which are located at the head of the sedimentation basins. The basins include flocculation equipment consisting of a two tiered mixer paddle system and shaft.

5.4.4.1 Observations

- Aside from general dampness, water infiltrating through leaks and a small amount of water on the bottom level slab, the basin appeared fairly dry.
- The walls were covered with a white film which is likely deposition from the chemicals used in the treatment process. The film prevented a thorough observation of their condition. The concrete did however appear solid but is starting to show signs of exposed aggregate. In addition, the edges of the opening between the two Floc Tanks were damaged with exposed aggregate showing. The walls in each of the basins should be power washed to expose the concrete surfaces and they should be completely drained and re-inspected in order to fully assess their condition (S-29).
- The mixer paddle and shaft were corroded. See the Process related discussion in this Report for further details.

5.4.5 Gate and Screen House

The gate and screen house structure is located adjacent to the reservoir dam wall. It is not in service. Access to the structure was limited to exterior inspection only. The structure is