

CENTURY ASPHALT ROCK CRUSHER HOUSTON, TX

CHALLENGE

Century Asphalt constructed a new asphalt plant in Houston, TX. The site had previously been a landfill. The foundation design to support the rock crusher was a 50FT long x 14FT wide x 5FT thick concrete pad with concrete columns extending upwards to set the rock crusher on. The total weight of the concrete foundation with rock crusher was approximately 750,000 pounds. Once the rock crusher was placed into operation, the structure settled 14 inches in one area and was twisted out of level to various degrees throughout the remainder of the foundation. The settlement issue occurred due to continual intense vibration of the rock crusher, while in operation, exposing the weak subgrade beneath the foundation. Low overhead clearance, to access the foundation and perform the work further complicated the repair process. In addition, it was of critical importance that the foundation be within an 1/8-inch tolerance of level throughout, due to the operating specifications of the rock crusher.

SOLUTION

Superior Grouting was contracted to stabilize and level the rock crusher foundation utilizing the upstage compaction grouting process. Testing was performed to determine the depth of load bearing soils. Two-inch ID, high-pressure seamless pipe, were set to a 32FT depth on an approximate 5FT grid pattern. A low mobility 0 to 1-inch slump, cement-based grout, was injected at high pressure to densify the existing subgrade soils. The process was repeated in 2FT lifts to the top of the grout zone. The foundation was monitored for lift continuously throughout the process. The approximately 750,000-pound structure was stabilized and raised to within the required tolerance.



PROJECT SUMMARY

Upon completion of the repair, the plant was placed into operation. Century Asphalt monitored the foundation for the slightest of movement, on a continual basis, over the period of a year and beyond. No movement has been detected to date.

