



subject contract was awarded to Appellant on or about July 24, 1985. The project contains eighteen separate structures, consisting of eight concrete tanks, an underground piping and pump station, three single-level buildings and other miscellaneous buildings and structures.<sup>1</sup>

2. Appellant sets forth two claims in this appeal as follows:<sup>2</sup>

A. WMS No. 136: Appellant seeks an equitable adjustment in the amount of \$9,722.00 for alleged additional non-contract work required by DGS to correct design deficiencies in the Shirco sludge incinerator.

B. WMS No. 137: Appellant seeks an equitable adjustment in the amount of \$11,322.00 for pressure grouting performed by Appellant to stop leaks allegedly caused by defective design of the equalization tanks.

Findings of Fact - WMS No. 136

3. O'Brien & Gere Engineering, Inc. (OBG) the DGS project engineer prepared the specifications for the sludge incinerator. Part 1.02A of the specifications provided that the contractor could choose either a specific manufacturer of the incinerator, Shirco, Inc. (Shirco), or an equal.

In this regard the specifications further provided:

The sludge incinerator as manufactured by Shirco, Inc. is shown on the Contract Drawings. The related equipment shown on the drawings, such as the sludge conveyor have been designed to operate in conjunction with the Shirco

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<sup>1</sup>This appeal is related to an earlier proceeding, MSBCA Consolidated Docket Nos. 1373 and 1385, involving the same project.

<sup>2</sup>Only entitlement is at issue in the appeal.

incinerator. Manufacturers of equipment other than Shirco, Inc. will be considered provided the equipment meets the requirements of this section. The Contractor shall supply complete drawings for modifications to related equipment if the alternate incinerator offered is not compatible with the system design as shown. All drawings and expenses incurred to modify the system design to accommodate alternative equipment as required by the Engineer shall be at the Contractor's expense.

Section 11171, Part 102C2.

4. Appellant solicited Shirco for a proposal to provide an incinerator and then submitted its lump sum bid for the project including the Shirco incinerator. Appellant issued a purchase order to Shirco and Shirco then began to issue shop drawings for the Shirco incinerator to Appellant.

5. Appellant reviewed the shop drawings to determine if they were acceptable. When judged acceptable, including any revisions and changes, Appellant forwarded the shop drawings to OBG. Based on the shop drawings, OBG incorporated the Shirco incinerator design into the overall system for the wastewater treatment plant.

6. Shirco began manufacturing the equipment according to the shop drawings as approved by OBG and then sent the equipment to Appellant for installation.

7. After the incinerator was installed, but prior to completion of the final electrical and wiring work, Shirco sought bankruptcy protection. A successor firm, Ecova Corporation (Ecova) took over the incinerator work for Appellant.

8. In inspecting the incinerator system as installed, Ecova noted certain deficiencies, and on February 10, 1988 Ecova sent Appellant a letter detailing nineteen (19) items of work it believed were

required to be done in order to properly complete the incinerator system. (Appellant's Ex. 3). Appellant determined that it had responsibility for eleven (11) of the items set forth in the Ecova letter as punch list items. However, Appellant further determined that the other eight (8) items were extras not contemplated by the contract specifications. DGS, nevertheless required the work to be done and Appellant sought a change order in the amount of \$9,722 for completion of the eight (8) disputed items.<sup>3</sup>

Findings of Fact - WMS No. 137

9. As part of the contract, the specifications required the Appellant to supply and erect two (2) flow equalization tanks, each to be forty-two feet (42') in diameter by twenty-one feet (21') high, with a capacity of 229,000 gallons. See Respondent's Ex. 5.

10. The Appellant constructed the tanks, but upon the initial liquid testing, leaks were observed at the base of the east tank and the ground was wet adjacent to a part of the west tank. DGS directed Appellant to stop the leaks and make the tanks liquid tight. Appellant tried external patches, coating the bottom of the tanks and finally pressure grouting. The external patching and bottom coating did not stop the leaks. The pressure grouting, however, did succeed.

Appellant asserts that the leaks were caused by faulty design as to the thickness of the concrete in the tank base and by insufficient soil compaction under the bases. Appellant claims

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<sup>3</sup>The eight (8) items for which Appellant seeks compensation are items 2, 3, 4, 5, 6, 12, 15, 18. Appellant, through Ecova, performed all eight (8) items. Ecova billed Appellant \$8,921.51 for the work. Appellant seeks a change order for such work in an amount including overhead and profit of \$9,772.00.

additional costs of \$11,332 to make the tanks liquid tight. DGS contends that the design was not deficient and that the responsibility for making the tanks liquid tight rests on Appellant.

11. The procurement officer issued a final decision denying Appellant's claims in WMS Nos. 136 and 137 on February 24, 1989, and Appellant appealed.

#### Decision

##### WMS No. 136

Appellant seeks an equitable adjustment for the eight (8) disputed items of work it was required by DGS to perform in connection with the Shirco sludge incinerator as set forth in the February 10, 1988 letter from Ecova.

Appellant relies on the principle as previously noted by the Board that "[a] contracting authority impliedly warrants that the plans and specifications which it furnishes are adequate and sufficient for the purpose intended." Martin G. Imbach, Inc., MDOT 1020, 1 MSBCA ¶52 (1983) at p. 17. Here DGS specified a Shirco incinerator as acceptable and based the contract drawings thereon. DGS through its engineer, OBG, approved the shop drawings, for the incinerator. Thus DGS impliedly-warranted that if the drawings were followed, a satisfactory result would be obtained. See Granite Construction Company, MDOT 1014, 1 MSBCA ¶66 (1983) at pp. 15-16. There is no duty imposed upon the construction contractor, under such circumstances, to investigate whether the specified design indeed would produce the desired result. *Id.* This implied

warranty attaches to government-furnished specifications even though the government does not actually prepare the specifications. See North American Phillips Co. v. United States, 175 Ct. Cl. 71, 358 F.2d 980 (1966). In the instant case, DGS has tried to shift liability for the defective Shirco design to Appellant by arguing that: (a) Shirco was Appellant's subcontractor; and (b) the design incorporated by DGS into its contract drawings was originally prepared by Shirco. However, by incorporating the Shirco design into its contract drawings, regardless of who initially prepared the design, DGS impliedly warrants the sufficiency of the design. Tranco Industries, Inc., ASBCA 22379, 78-2 BCA ¶13,307 (1978).

Applying these principles to the facts before us we make the following determinations on the disputed items.

Item 2 of the Ecova letter states that "the interlocks for the inclined feed conveyor (provided by others) are not wired to the Shirco control panel." The interlocks are safety devices which shut off the conveyor if the incinerator breaks down so there will not be a backup of sludge in the incinerator.

The original Shirco incinerator drawings did not show interlocks. DGS notes that Part 2.20B1 of the specifications entitled "Instrumentation" required that the "furnace" (incinerator) manufacturer furnish a pre-wired control panel containing instrumentation and controls to monitor and control logic functions, control loops, alarms and interlocks. However, the inclined feed conveyor was designed by OBG and was separate and

distinct from the sludge incinerator supplied by Shirco for installation by Appellant. The incinerator specifications therefore do not govern the placement of feed conveyor interlocks. Mr. Rick Armstrong, Appellant's project manager, testified that the interlocks were not necessary for operation of the incinerator but were requested by OBG for safety reasons. (T-37). As such they were an extra to the contract for which we find Appellant should be compensated.

Items 3 and 4 will be considered together because they both concern covers over conveyors to prevent air leakage into the incinerator that would affect the combustion process. The Ecova letter called for covers over the feed conveyor and the down stream ash collection hopper. Without covers, air is drawn into the incinerator reducing the efficiency of the incinerator. Both Appellant and DGS agree that the initial design for the incinerator system did not contain covers for the conveyors. Mr. Peter Brelia, resident project manager for OBG, testified that OBG had not indication from Shirco's original design that the conveyors had to be covered. Nevertheless, the absence of covers on the contract drawings is the responsibility of DGS and Appellant is entitled to recover its costs for adding the covers.

Item 5 called for local on/off switches for the ash collection system. The original design package showed the closest disconnect in the electric switching room approximately 75 feet away. Because the incinerator's design did not show the local on/off switches referenced by Ecova, installation for such switches, as ordered by

OBG, was an extra to Appellant's contract.

Item 6 required that the size of the stack drain hole be increased from 1/4" to 1" to allow adequate drainage. The stack drain collects rainfall and water coming off of the scrubber. As designed, the stack drain hole was to be only 1/4" in diameter. Appellant was required to drill this hole to enlarge it to 1". This minor adjustment we find to constitute an addition to Appellant's contract.

Items 12, 15 and 18 will be considered together because they all concern work involving placement of personal protection guards over various pieces of moving equipment; in particular, the feed chute damper counterweight, the cake breaker and air blower drive, and the cake breaker and zero speed sensor target arms. Mr. Armstrong testified that most of the moving equipment was painted safety orange and that the guards were not part of the original design, but were personal preferences of OBG. DGS, in its post hearing brief, concludes that "personnel guards were necessary for the safe operation of the equipment and, although not specified in the original Shirco plans, were part of the overall concept in that the State wanted a "complete operating system" that would meet industry standards for safety and efficiency. The State, however, has an obligation to put its contractors on notice as to what it expects of them and we find that Appellant should not reasonably have understood that guards were required by the contract. See Granite Construction Company, supra. Therefore, we find that the installation of the personnel protection guards called for by item



numbers 12, 15 and 18 of the Ecova letter constitute an extra to Appellant's contract.

In summary, we find that the eight (8) disputed items, none of which appeared on the shop drawings, were extras to Appellant's contract for which Appellant is entitled to an equitable adjustment.

WMS 137

Appellant claims that the leaks in the flow equalization tanks were caused by faulty design as to the thickness of the concrete in the base of the tank or by insufficient soil compaction under the bases. The State argues that the design was not deficient and that the liability for making the tanks liquid tight rests on the contractor. The specifications called for 2 (two) completely installed glass coated bolted steel tanks. Acceptable manufacturers were listed as A.D. Smith Aquastore (sic) or equal. Appellant chose A.O. Smith Harvestore Products, Inc. (Harvestore) as manufacturer and provided design drawings to OBG.

The base of the tanks was approximately five inches (5"), as shown on the construction drawing and the shop drawing. OBG, although not tank specialists, based its design for the tank bases on technical information from Harvestore. It is customary for OBG to keep files of literature of the various manufacturers and use that in their design plans.

Appellant offered no expert engineering testimony on this issue. Appellant argues that it performed according to the contract and therefore since the tanks leaked, the leaks must have

been due to design deficiencies or errors by DGS in testing the subgrade.<sup>4</sup> A manufacturer's representative from Harvestore, Francis Grillot, Jr., after visiting the site, disputed Appellant's conclusion that there was a design deficiency in the tank bases. Mr. Grillot noted.

A.O. Smith Harvestore Products, Inc. has hundreds of tanks installed in this type of service, many with diameters considerably longer than these tanks, that do not have leakage at the base. Where we have observed base leaks, we have traced most of the problems to improper quality and/or placements and finish of the concrete during construction.

Appellant also speculated that the leaking may have been due to inadequate soil compaction. However, Appellant was never notified that any improper compaction or any improper grade elevations that would affect the density of soil under the tank existed. The State had a soil testing company, Earth Engineering Science, Inc., under contract for this project. Earth Engineering had the responsibility for testing the compaction of the soil. According to Mr. Wallace North, Jr., the assistant capital projects manager for DGS, soil test results were supplied to both the DGS inspector and OBG. If there were a problem, the contractor was to be notified immediately. To Mr. Wallace's knowledge no such problems existed on this project.

Based on the above, we find that Appellant has failed to meet its burden to prove that the leaking from the tanks was caused by design defects or inadequate soil compaction. We, therefore, deny Appellant's claim for the cost of making the tanks liquid tight.

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<sup>4</sup>Appellant's project manager testified that he has no idea why the tanks were leaking.