

412. Then the figures you have given, putting the contractors' plant at £1,000, represent a total of £6,365?—Yes.

413. And you find no difficulty in prosecuting the work with that limited plant?—No, not at all.

414. What have you done for this £72,000?—We have extended our works 674 feet from low water.

415. What are the weights of your concrete blocks?—Twenty-eight and a half tons, and some thirty tons.

416. What precautions have you made against sand silting up?—We have made none. We send the diver down to examine the foundation previous to laying blocks, and latterly he has reported no large amount of silt in front; at any rate, not sufficient for using the dredger.

417. I suppose the action of the waves clears it away?—Very nearly.

418. Have you had any part of the walls washed away?—Never.

419. Your works were undermined at the south side, were they not?—Yes, until we made provision against it. Now, however, nothing of the sort occurs.

420. The apron-blocks, I suppose, are continued on the outer side of the breakwater?—Yes.

421. It has been found necessary to make this addition to keep the main part of your work from being undermined?—This addition was to prevent the foundation-blocks from being undermined.

422. Is No. 3 contract similar to No. 2?—Yes, with the addition of a wave-breaker.

422A. What depth of water have you at the end of No. 2?—Eighteen feet six inches at low-water spring tides.

423. How far will contract No. 3 extend your works?—One hundred and eighty feet further, with a depth of 20 feet at low spring tides.

424. At what cost have you estimated the works?—When No. 3 contract is finished I calculate the cost will be £77,950, not including plant and supervision.

425. Do you obtain your gravel and sand cheaply?—The sand costs us 1s. 8d. per yard of concrete, and the gravel 1s.

426. Can you say what is the cost per yard of concrete?—It costs 30s. 8d. per yard, and including contingencies and supervision about 32s. 6d.; that is based on the cement costing £4 13s. per ton.

427. How many casks of cement go to the ton?—About five and a half.

428. What is the cost of cement per yard of concrete?—About 16s. 6d. for every yard; then there is storage and damage, which would bring it up to 18s.

429. What proportion of cement do you use to the finished mass?—We use about 1 in 5.

430. What is the weight per bushel?—115 lb. or 116 lb. I have cement that averaged 110 lb., and found it very good indeed.

431. *Mr. Weston.*] What pressure will it bear?—I never tried it. Our test is a tensile strain of 1,000 lb. to the $2\frac{1}{4}$ square inches. We decline to use it if it does not reach that.

432. *The Chairman.*] Do you know anything of New Plymouth?—I only passed by it.

433. Can you say whether the risk for contingencies would be greater there than at Timaru?—I could not speak on that subject: people in general, however, say that Timaru is the worst place.

434. You have no reason to suppose that the risk will continue as you proceed with the work?—No; from the plans of the New Plymouth works I should consider the sea would require to be much smoother than at Timaru.

435. What is the rise and fall of tide at Timaru?—It varies; but about 7 feet in springs.

436. At New Plymouth the rise and fall is 12 feet; such being the case, it would add to the expense of constructing the breakwater?—Yes; the difference between 7 feet and 12 feet.

437. What would be the additional cost of raising the wall 5 feet higher?—£10 5s. per foot run of the breakwater.

[Document put in.]

TIMARU HARBOUR BOARD.

STATEMENT of Expenditure from January, 1877, to 30th June, 1881.

		£	s.	d.	£	s.	d.
Landing Service—Plant and repairs only	..	..	..	..	2,943	0	1
Breakwater—							
Preliminary expenses	...	1,672	3	9			
Three contracts	...	29,468	8	9			
Extras	...	3,006	14	8			
Cement	...	41,548	11	3			
Sea-wall, diving, boring, &c.	...	847	11	0			
					76,543	9	5
Wharf	..	..	..	..	3,586	14	3
Plant—							
Crane and repairs, rails, &c.	..	4,021	11	3			
Diving apparatus	..	357	10	4			
Crane-dredger	..	1,565	8	11			
Stores, furniture, &c.	..	610	7	10			
Moorings, buoys, and hawsers	..	1,054	16	3			
					7,609	14	7
Harbour Department and lighthouse	...	..	..	..	1,676	12	3
Salaries and expenses	...	..	..	..	4,749	1	9
					£97,108	12	4

Timaru, 13th July, 1881.

E. & O.E.—W J TENNENT, Treasurer.

SATURDAY, 30TH JULY, 1881.

Mr. JOHN MCGREGOR, examined.

438. *The Chairman.*] You are engineer to the Oamaru Harbour Board?—Yes.

439. Are you a member of the Institute of Civil Engineers?—No.