

**APPENDIX A**

**Report by Foothill Engineering  
& Dewatering, Inc.**

# Foothill

## ENGINEERING & DEWATERING, INC.

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Contractors License Class A 443557

January 8, 2004

Pacific Soils Engineering, Inc.  
710 East Parkridge Ave. Suite 105  
Corona, Ca 92879

Atten: James B. Castles

Subject: Shea Homes  
Huntington Beach  
Tract 15419

Gentlemen:

Please find attached preliminary design for dewatering the subject project. This design is based upon lowering the water levels in the underlying sand and gravel stratas to below the excavation levels indicated. Sumping and gravel bedding will also be required to handle the water in perched upper zones. The design does not include any dewatering for the storm drain crossing of the Wintersburg Channel.

As you will see, the design includes drilling of 9 ea 60' deep wells along the south property line adjacent to the channel. The maximum drawdown outside the property line to the north (tract 5702) would be approximately 4 ft. The estimated pumping rate for the 9 wells is approximately 2200 gpm.

Per your request we will have an outside subcontractor review the water analysis you provided to advise us if any treatment should be anticipated.

We trust the attachments are self-explanatory and we look forward to discussing this with you further.

Sincerely,



Wendell Bradford

**Well Data**  
**SHEA HOMES HB**

Water Table Height	<b>60</b>	Water Drawdown	<b>16</b>
Saturated Thickness	<b>60</b>	Well Diameter	<b>24</b>
Well Depth	<b>55</b>	Number of Wells	<b>9</b>
Permeability Coefficient	<b>0.050</b>	Distance from Line Source	<b>0</b>
Excavation Length	<b>1700</b>	Excavation Width	<b>400</b>
Radius of Influence	<b>1290.60</b>	One Well Discharge (CFM)	<b>32.29</b>
Number of Grid Points Across	<b>28</b>	Distance Between Points Across	<b>100</b>
Number of Grid Points Down	<b>18</b>	Distance Between Points Down	<b>100</b>

**Grid Data**  
**SHEA HOMES HB**

<b>Well #</b>	<b>X</b>	<b>Y</b>	<b>Image X</b>	<b>Image Y</b>
1	2410	1210		
2	2240	1010		
3	2060	910		
4	1890	830		
5	1710	730		
6	1550	650		
7	1370	570		
8	1180	470		
9	890	320		

**Well Calculation Results**  
**SHEA HOMES HB - Unconfined Well**

Water Table Height	60	Well Spacing	466.67
Drawdown	16	TotalFlow (GPM)	2173.52
Saturated Thickness	60	Total Flow 1 Well (GPM)	241.50
Well Diameter	24	Total Flow (CFM)	290.58
Well Depth	55	One Well Discharge (CFM)	32.29
Number of Wells	9	Max Flow at Drawdown (GPM)	278.18
Permeability Coefficient	0.050	Water Height / Depth	28.17
Distance from Line Source	0	Aquifer Saftey Factor	1.152
Exacvation Length	1700	Screen Area per Well	774.87
Exacvation Width	400	Equivalent Radius	524.97
Radius of Influence	1290.60	Fully Penetrating Well Wetted Depth	33.17