



Via e-mail:

**CETCO
SHORE PAC
SLURRY PROGRAM**

**PROJECT SPECIFIC PLANS UTILIZING
SHORE PAC
IN THE CONSTRUCTION OF
SLURRY DISPLACED DRILLED SHAFTS**

DESIGNED FOR:

CONSTRUCTION COMPANY

**STREET ADDRESS
CITY, STATE, ZIP CODE
P: 312.563.5400 F: 312.563.5479**

**Mr.
PROJECT SUPERINTENDENT
Mobile: #**

PROJECT;

NAME OF PROJECT

COUNTY, CITY, STATE

DESIGNED BY:

**John H. Berry, P.G.
Hydrogeologist/Geologist
CETCO Construction Drilling Products**



Shore Pac Slurry Program

Contractor	CONSTRUCTION COMPANY
Project	PROJECT NAME
Location	COUNTY, CITY, STATE
Application	SLURRY DISPLACED CAST-IN-PLACE DRILLED SHAFTS
Soil Conditions	SILTY SAND, MED DENSE, GRAY WET WITH SHELL FRAGMENTS
Primary Slurry	SODA ASH TO ADJUST PH; DE-CHLOR TO NEUTRALIZE CHLORINE; SHORE PAC AS PRIMARY SLURRY; ADDITIVES , STONE STOP FOR THE GRAVEL AND SAND SURE SEAL FOR SLURRY LOSS; SLURRY BUSTER TO BREAK THE POLYMER SLURRY FOR DISPOSAL

Shore Pac Product Cost Estimation Worksheet

Project: Name & Location

Properties & Volume

pH	8-10	Alkaline
Viscosity	78	Sec/qt - Based on <u>9</u> lbs Shore Pac per <u>1000</u> gal
Density	8.34	Lbs/gal - <u>62.1</u> - <u>62.5</u> lb/PCF
Sand Content	1.0%	@ Mid-Shaft, Bottom, & After Cage Placement
Static Water	6'	Feet Below Grade, Requires Minimum 6'-10' Hydrostatic Head
Soil Log Available	YES	Silty sand with shells.
Total Number of Shafts	N/A	54" & 60" Shafts
Shaft Diameter	54" 60"	= 119.12 gal/ft = 147.06 gal/ft
L F for 54" diameter	20,000'	= 2,382,400 gal hole volume
Tip for 60" diameter	34,000'	= 5,000,040 gal hole volume
Total yd ³	36,554.00 yd ³	Total cubic Yards on Take Off
Total ft ³	986,958.00ft ³	Total cubic Feet on Take Off
Estimated Total Volume	7,382,445 gal	= 36,554.00 yd ³ x 27 ft ³ = 986,958.00 ft ³ x 7.48 gal/ft ³ = 7,382,445 gal
Estimated Fluid Loss	40%	=7,382,445x40%=2,952,978gal+7,382,445 =10,335,423 gal(Estimate)
Estimated Recycle	20%	=10,335,423 x 20% = 2,067,085 Reduction in Slurry Volume
Estimated Total Gallons	HV	= 8,268,338 gallons slurry All shafts (Including Fluid Loss Estimate)



Estimated total product usage for this project:

Soda Ash	49,000	Lbs	=	980	50 lb bags	@	\$00.00	Per bag	=	\$00.00
Shore Pac	75,240	Lbs	=	1368	55 lb bags	@	\$000.00	Per bag	=	\$00.00
De-Chlor	4,800	Lbs	=	96	50 lb pail	@	\$00.00	Per pail	=	\$00.00
Stabilizer	480	Gals	=	96	5 gal pail	@	\$00.00	Per pail	=	\$00.00
Shore Pac Liquid	480	Gals	=	96	5 gal pails	@	\$00.00	Per pail	=	\$00.00
Stone Stop	7200	Lbs	=	144	50 lb bags	@	\$00.00	Per bag	=	\$00.00
Sodium Hydroxide	4400	Lbs	=	80	55 lb bags	@	\$00.00	Per bag	=	\$00.00
Slurry Buster	135	Gals	=	9	15 gal pail	@	\$00.00	Per keg	=	\$00.00
<u>Estimate sub total</u>										<u>\$00.00.00</u>

Note: **Products are rounded off to closest case, pail, or bag quantity**

Slurry Engineer

A **Slurry Engineer** is available (**when requested**) for slurry management & training:

\$000.00	Per day plus expenses	x	12	Days	\$000.00
\$000.00	Per day per diem	x	12	Days	\$000.00
\$000.00	Round Trip Airline Tickets	x	3		\$000.00

Estimate Total = \$\$\$

This is an estimate:

Our Slurry Engineers, or we, carefully prepared this program and cost estimate to the best of our knowledge of the formations to be drilled. Our knowledge is based on soil logs or information received. Our agents, as to this programs correctness or completeness, or we, make no representation or warranty and no liability is assumed for any damages resulting from the use of the same. Fluid loss percentage & product amounts may vary according to "actual" soil/water and down-hole conditions.

Recommendations

This project includes approximately 8,268,338 gallons of slurry. With slurry loss at 40% added to the total. The 400+ large diameter drilled shafts consist of 54" diameter to 120.0ft tip point and 60" diameter shafts averaging to 115 - 140 ft tip. Soil borings were available; a description of the soil conditions indicates a marsh material consisting of silty sand with shells and medium dense fine to coarse sand, with shell fragments getting stiffer with depth. The water table information indicates the water table at 5' level. A top casing will be set through the material near the ground surface to 35 - 40 feet below land surface. Fresh water will be used to mix the Shore Pac slurry. It is recommended that the drilled shafts be drilled under slurry to maintain proper head pressure starting with 6 - 8 feet of hydraulic head above the known water table. Due to the fluid loss estimated at 40% it is recommended to start drilling as early in the day as possible to set the rebar cage and pour concrete by the second day, leaving the hole open full of slurry only 1 night. Due to the complexity and size and depth leaving the drilled holes open full of slurry over-night is necessary. The hole will need to be monitored and topped-off with slurry over-night.



● Page 4

December 22, 2008

The Shore Pac slurry will be pre-mixed at 9 lbs per 1,000 gallons within 20,000 gallon mixing tanks. The slurry will be recycled back into the holding tanks after each shaft is poured for re-use. The slurry will be strengthened back to levels of 78 sec/qt viscosity and pH adjusted to 8-10 recommended for this project. Keep the shaft full at all times to impart the maximum hydrostatic head possible on the loose sand layer. Soda Ash is added to the mix water prior to mixing the Shore Pac polymer. The Soda Ash safely adjusts the pH when adding 6 lbs per 1,000 gallons mix water. The viscosity will be easier to maintain without the added use of more polymer by adding De-Chlor. The application of De-Chlor is 1/2 lb/per 1,000 gallons water.

Terms and Conditions

All pricing is in US dollars. All payment terms are net thirty (30) days from the date of invoice with approved credit. Pricing is exclusive of any tariffs, taxes, and VAT's.

Ordering Information

Orders should be placed with the Order Desk at the following:

CETCO Construction Drilling Products

Order Desk Contact: Jackie Manders

Fax: 847.851.1304

Toll Free: 800.527.9948

E-mail: Jackie.manders@cetco.com

All CETCO products are shrink-wrapped and supported by (42x42) wood pallets.

If have any questions do not hesitate to contact us at 800.527.9948.