



NAVFAC PACIFIC

**RED HILL, HI - UG TANK CLOSURE - ALTERNATIVE 01** Project # RED HILL HI - UG TANK CLOSURE OPTIONS - REV-06 - 2022-11-30

**DRAFT - ROM ESTIMATE - REV-04**

Date: 11/30/2022

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**RED HILL, HI - UG TANK CLOSURE - ALTERNATIVE 01**

**DRAFT - ROM ESTIMATE - REV-04**

**Project name** RED HILL HI - UG TANK CLOSURE OPTIONS - REV-06 - 2022-11-30  
Moanalua  
HI 96819  
USA

**Labor rate table** 22\_Labor\_Union\_2022

**Equipment rate table** 1\_RSM\_Equip\_2022

**Report format** Sorted by 'Alternative/Phase'  
'Detail' summary

**Factor table** Hawaii-Honolulu



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Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
<b>01 ALTERNATIVE 1 - CLOSURE IN PLACE</b>							
<b>01543.305 Equipment Rental</b>							
Boom System & ODC's - Large Tanks	14.00 tank	-	-	-	1,350,000.00 /tank	1,350,000.00 /tank	18,900,000
ODC's - Surge Tanks	4.00 tank	-	-	-	410,000.00 /tank	410,000.00 /tank	1,640,000
<b>Equipment Rental</b>							<b>20,540,000</b>
<b>01740.013 Progress Cleaning</b>							
Utilities & Cleaning - Large Tanks	14.00 tank	-	-	-	2,611,500.00 /tank	2,611,500.00 /tank	36,561,000
Utilities & Cleaning - Surge Tanks	4.00 tank	-	-	-	750,650.00 /tank	750,650.00 /tank	3,002,600
<b>Progress Cleaning</b>							<b>39,563,600</b>
<b>02110.300 Hazards waste clnp/pckp/</b>							
Hazardous W cln/pu/dspl, dumpsite disposal charge, max - demo'd 32" steel pipe/fittings/misc. - Surge Tank Infill	2,124.94 ton	-	-	900.00 /ton	-	900.00 /ton	1,912,446
<b>Hazards waste clnp/pckp/</b>							<b>1,912,446</b>
<b>03310.701 Placing concrete</b>							
Placing concrete, concrete pump, for structural infill >24" thick - Surge Tank Infill	8,317.90 cy	122.72 /cy	-	-	-	122.72 /cy	1,020,750
<b>Placing concrete</b>							<b>1,020,750</b>
<b>05090.900 Welding structural</b>							
Welding, continuous fillet, 4 passes, 1/2" thick, 0.7#/L.F. - Weld shut 8' Diameter Manhole @ 190' Level	502.60 lf	83.14 /lf	1.48 /lf	-	-	309.62 /lf	155,613
<b>Welding structural</b>							<b>155,613</b>
<b>11200.100 Filter Underdrain-Leopold</b>							
Mechanical Grout Mixer (10 day per tank nozzle)(See Note 1)	200.00 day	665.12 /day	-	-	-	1,165.12 /day	233,024
<b>Filter Underdrain-Leopold</b>							<b>233,024</b>
<b>11202.100 Granular Media Filter</b>							
8' Tank Manway - removal and destruction	20.00 ea	5,392.32 /ea	1,500.00 /ea	-	-	9,392.32 /ea	187,846
<b>Granular Media Filter</b>							<b>187,846</b>
<b>11390.052 Plant Water Submersible Pumps</b>							
Machine Grout - Grout Tank Nozzle Piping, solid, 12" dia x 50 lf (39.27 cu ft) EA (See Note 2)	785.40 cuft	103.93 /cuft	56.00 /cuft	-	-	159.93 /cuft	125,605
<b>Plant Water Submersible Pumps</b>							<b>125,605</b>
<b>13851.350 Tank leak detection systems</b>							
Tank leak detection systems,, monitoring, internal, product line - Modification of lower access tunnel lines for water monitoring	20.00 ea	-	-	-	10,000.00 /ea	10,000.00 /ea	200,000
<b>Tank leak detection systems</b>							<b>200,000</b>
<b>r01511.380 Temporary Utilities</b>							



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<b>r01511.380 Temporary Utilities</b>							
Temporary Utilities, power/air/water/ventilation for job duration	15,840.00 lf	-	-	-	19.15 /lf	19.15 /lf	303,336
<b>Temporary Utilities</b>							<b>303,336</b>
<b>r01543.380 Marine equipment rental without operators</b>							
Marine equipment rental;barge,800 ton,45' wide x 90' long - hauling demo'd pipe off-island - Surge Tank Infill	1,460.00 day	-	-	-	-	1,109.54 /day	1,619,928
<b>Marine equipment rental without operators</b>							<b>1,619,928</b>
<b>r02411.346 Selective Demolition, Steel Pipe With Insulation</b>							
Selective demolition, Nozzles @ Lower Access Tunnel Bulkhead	20.00 ea	2,566.48 /ea	-	-	-	2,684.69 /ea	53,694
Selective demolition, steel pipe with insulation, 26"-36", includes valves & fittings - Asbestos & Lead Contaminated - Surge Tank Infill	18,480.00 lf	102.66 /lf	-	-	-	126.30 /lf	2,334,031
<b>Selective Demolition, Steel Pipe With Insulation</b>							<b>2,387,725</b>
<b>r02411.927 Selective Demolition, Torch Cutting</b>							
Selective demolition, Steel Plate installation for Tank sealing - Surge Tank Infill	4,000.00 sf	39.70 /sf	25.00 /sf	-	-	73.06 /sf	292,228
<b>Selective Demolition, Torch Cutting</b>							<b>292,228</b>
<b>r03305.340 Concrete In Place</b>							
Structural concrete, in place, tank infill (3000 psi), over 20 C.Y. - Surge Tank Infill	8,317.90 cy	407.96 /cy	475.00 /cy	-	-	883.46 /cy	7,348,501
<b>Concrete In Place</b>							<b>7,348,501</b>
<b>r13050.550 Selective Demolition, Pre-Engineered Steel Buildings</b>							
Vents, circular, 12" to 24" diameter, selective demolition - demo/grout/seal off to outside	20.00 ea	11,987.36 /ea	-	-	-	11,987.36 /ea	239,747
<b>Selective Demolition, Pre-Engineered Steel Buildings</b>							<b>239,747</b>
<b>r22111.374 Pipe, Plastic</b>							
Pipe, plastic, PVC, high impact/pressure, 4" diameter, schedule 80, includes couplings 10' OC, and hangers 3 per 10' - New Water Collection Drainpipe in lower tunnel	2,000.00 lf	26.90 /lf	24.50 /lf	-	-	51.40 /lf	102,796
<b>Pipe, Plastic</b>							<b>102,796</b>
<b>r26050.510 Electrical Demolition</b>							
Disconnect Tank Electrical Connections, electrical demolition, remove, including disconnecting wire & conduit terminations	20.00 ea	12,985.76 /ea	125.00 /ea	-	-	13,110.76 /ea	262,215



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<b>Electrical Demolition</b>							<b>262,215</b>
<b>01 ALTERNATIVE 1 - CLOSURE IN PLACE</b>	<b>1.00 LS</b>	<b>7,438,952.99 /LS</b>	<b>4,177,228.75 /LS</b>	<b>1,912,446.00 /LS</b>	<b>60,606,936.00 /LS</b>	<b>76,495,361.22 /LS</b>	<b>76,495,361</b>

Notes:

1. Filter Underdrain-Leopold - Mechanical Grout Mixer: The grout mixer is used to mix and distribute the grouting of the tank nozzle piping completely 12' diameter piping assumed at 50' each.
2. Plant Water Submersible Pumps Machine Grout - Grout Tank Nozzle Piping: Red Hill Tank Closure Plan Document identified the Tank Nozzle Piping to be fully grouted. The estimator anticipated a 50' length of 12" pipe to be fully grouted per tank.



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**Partial Totals**

Description	Amount	Totals	Hours	Rate	Cost / Unit	% of Total
Labor	7,438,953		112,331.568 hrs			6.25%
Material	4,177,229					3.51%
Subcontract	1,912,446					1.61%
Equipment	2,359,797		42,394.444 hrs			1.98%
Other	60,606,936					50.96%
<b>Subtotal Raw Costs</b>	<b>76,495,361</b>	<b>76,495,361</b>				<b>64.31%</b>
Material Sales & Use Tax - %	196,831			4.712 %		0.17%
Construction Equip Tax - %	111,194			4.712 %		0.09%
<b>Total Taxes</b>	<b>308,025</b>	<b>76,803,386</b>				<b>0.26%</b>
Location Adj. Factor (incl. in Estimate Detail)						
Security/Site Access Premium	7,680,339			10.000 %		6.46%
<b>Subtotal Adj. Factors</b>	<b>7,680,339</b>	<b>84,483,725</b>				<b>6.46%</b>
<b>Subtotal Subcontractor I,OH&amp;P</b>	<b>2,093,443</b>	<b>86,577,168</b>				<b>1.76%</b>
Contractor Contingency						
<b>Subtotal Contingency</b>		<b>86,577,168</b>				<b>72.79%</b>
<b>Total Cost To Prime Contractor</b>		<b>86,577,168</b>				<b>72.79%</b>
General Conditions	8,657,717			10.000 %		7.28%
In-Tunnel Train Logistics	1,731,543			2.000 %		1.46%
Mobilization/Demobilization (2.50%/2.50%)	4,328,858			5.000 %		3.64%
<b>Subtotal Indirect Costs</b>	<b>14,718,118</b>	<b>101,295,286</b>				<b>12.37%</b>
Prime Contractor Home OfficeOH	4,051,811			4.000 %		3.41%
Prime Contractor Profit	10,129,529			10.000 %		8.52%
Bonds & Insurance	3,464,299			3.000 %		2.91%
<b>Subtotal OH&amp;P</b>	<b>17,645,639</b>	<b>118,940,925</b>				<b>14.84%</b>
Architectural/Engineering Fees						
PMCM Fees						
<b>Total A/E &amp; PMCM Fees</b>		<b>118,940,925</b>				<b>100.00%</b>
Design Contingency						
<b>Subtotal Contingency</b>		<b>118,940,925</b>				<b>100.00%</b>
Escalation						
<b>Subtotal Escalation</b>		<b>118,940,925</b>				<b>100.00%</b>
<b>Total Prime Contractor Costs</b>		<b>118,940,925</b>				<b>100.00%</b>
Mech Owner-Provided Equip						
Elec Owner-Provided Equip						
<b>Total Owner-Provided Equipment</b>		<b>118,940,925</b>				<b>100.00%</b>
<b>Total Contractor Costs w/ OFCI</b>		<b>118,940,925</b>				<b>100.00%</b>
<b>Total Construction Cost</b>		<b>118,940,925</b>				<b>100.00%</b>
<b>Partial Total</b>		<b>118,940,925</b>				