

**FAC 1244    Other Operating Fuel Storage**

RUC:            \$2.31 GA

Source:        Special study for DLA/DESC in 2008/2009  
Based upon PACES estimate and calculated per unit as follows.

SUC:            \$2.07 GA

Source:        Special study for DLA/DESC in 2008/2009; same as SCF for FAC 1241 as follows.

## RUC FAC 1244 Other Operating Fuel Storage

### Parametric Cost Engineering System (PACES) Project/Assembly Detail Cost Report

**Project** DESC FAC 1244 Other Operating Fuel Storage  
**Project No.:** 1244-12470  
**Location:** ARLINGTON, VIRGINIA  
**Description:** Five largest catcodes by number in inventory  
**Comments:**

**Estimate Date:** 12/09/2008  
**Estimate By:** R&K fjk

**Agency:** Army

**Report Date:** 04/28/2009  
01:01 PM

**Construction Start Date:** 04/01/2009  
**Construction Midpoint:** 07/01/2009  
**Construction End Date:** 10/01/2009

**Escalation Rate:** 7.22% Based on Project Construction Midpoint

**Database Version:** Jan 2006 Cost Book  
**PACES Version:** 7.0.11

Project Name: DESC FAC 1244 Other Operating Fuel Storage

Project No: 1244-12470

## Project/Assembly Detail

04/28/2009

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### Cost Report Type Supporting

**Facility:** CatCode 12470

**Model:** Storage Tank

<u>Assembly</u>	<u>Description</u>	<u>Qty</u>	<u>UOM</u>	<u>Mtrl</u>	<u>Labor</u>	<u>Equip</u>	<u>Unit Cost</u>	<u>Total</u>
19092006	Earthwork, Steel Double Wall Und Grd Tank	50	CY	\$0.00 \$0	\$15.00 \$756	\$4.55 \$229	\$19.55	\$985
19092106	Concrete, Steel Double Wall Und Grd Tank	14	CY	\$149.74 \$2,021	\$111.07 \$1,499	\$1.88 \$25	\$262.68	\$3,546
19092206	Pipes And Fittings, Steel Double Wall Und Grd Tank	216	LF	\$6.40 \$1,381	\$10.12 \$2,186	\$12.26 \$2,649	\$28.78	\$6,216
19092306	Electrical, Steel Double Wall Und Grd Tank	108	LF	\$6.01 \$653	\$4.19 \$455	\$1.03 \$112	\$11.24	\$1,219
19092406	Controls, Steel Double Wall Und Grd Tank	3	EA	\$113.55 \$341	\$78.91 \$237	\$0.00 \$0	\$192.46	\$577
19092567	Tank, 37900 L (10000 gal), Undgrd, Steel, Dbl Wall	1	EA	\$16,701.58 \$16,702	\$1,172.83 \$1,173	\$594.52 \$595	\$18,468.93	\$18,469
<b>Model</b> Storage Tank				<b>\$21,098</b>	<b>\$6,306</b>	<b>\$3,610</b>		<b>\$31,013</b>
<b>Facility:</b> CatCode 12470				<b>\$21,098</b>	<b>\$6,306</b>	<b>\$3,610</b>		<b>\$31,013</b>

**Facility:** CatCode 12471 Above Ground

**Model:** Storage Tank

<u>Assembly</u>	<u>Description</u>	<u>Qty</u>	<u>UOM</u>	<u>Mtrl</u>	<u>Labor</u>	<u>Equip</u>	<u>Unit Cost</u>	<u>Total</u>
19092002	Earthwork, Horiz. Single Wall Steel Tank	85	CY	\$0.00 \$0	\$15.81 \$1,344	\$12.78 \$1,086	\$28.59	\$2,430
19092102	Concrete, Horiz. Single Wall Steel Tank	23	CY	\$162.85 \$3,746	\$127.78 \$2,939	\$0.00 \$0	\$290.63	\$6,685
19092202	Pipes And Fittings, Horiz. Single Wall Steel Tank	337	LF	\$6.51 \$2,195	\$10.18 \$3,431	\$0.00 \$0	\$16.69	\$5,626
19092302	Electrical, Horiz. Single Wall Steel Tank	54	LF	\$17.81 \$963	\$12.43 \$672	\$3.05 \$165	\$33.28	\$1,800
19092402	Controls, Horiz. Single Wall Steel Tank	4	EA	\$107.25 \$429	\$68.47 \$274	\$0.00 \$0	\$175.73	\$703

Project Name: DESC FAC 1244 Other Operating Fuel Storage

Project No: 1244-12470

## Project/Assembly Detail

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### Cost Report

<u>Assembly</u>	<u>Description</u>	<u>Qty</u>	<u>UOM</u>	<u>Mtrl</u>	<u>Labor</u>	<u>Equip</u>	<u>Unit Cost</u>	<u>Total</u>
19092522	Tank, 75700 L (20000 gal), Horiz., Steel, Single Wall	1	EA	\$17,862.09	\$1,699.06	\$701.29	\$20,262.44	\$20,262
				\$17,862	\$1,699	\$701		
19092703	Concrete Covered Basin	735	SF	\$3.58	\$4.49	\$0.83	\$8.90	\$6,538
				\$2,629	\$3,303	\$606		
19092706	Concrete Covered .915M (3') Berm	133	LF	\$15.37	\$34.53	\$7.38	\$57.28	\$7,607
				\$2,042	\$4,586	\$980		
<b>Model</b> Storage Tank				<b>\$29,866</b>	<b>\$18,247</b>	<b>\$3,539</b>		<b>\$51,651</b>
<b>Facility:</b> CatCode 12471 Above Ground				<b>\$29,866</b>	<b>\$18,247</b>	<b>\$3,539</b>		<b>\$51,651</b>

**Facility:** CatCode 821112

**Type** Supporting

**Model:** Storage Tank

<u>Assembly</u>	<u>Description</u>	<u>Qty</u>	<u>UOM</u>	<u>Mtrl</u>	<u>Labor</u>	<u>Equip</u>	<u>Unit Cost</u>	<u>Total</u>
19092002	Earthwork, Horiz. Single Wall Steel Tank	135	CY	\$0.00	\$15.81	\$12.78	\$28.59	\$3,860
				\$0	\$2,135	\$1,725		
19092102	Concrete, Horiz. Single Wall Steel Tank	36	CY	\$162.85	\$127.78	\$0.00	\$290.63	\$10,463
				\$5,863	\$4,600	\$0		
19092202	Pipes And Fittings, Horiz. Single Wall Steel Tank	528	LF	\$6.51	\$10.18	\$0.00	\$16.69	\$8,814
				\$3,439	\$5,375	\$0		
19092302	Electrical, Horiz. Single Wall Steel Tank	108	LF	\$17.81	\$12.43	\$3.05	\$33.28	\$3,597
				\$1,925	\$1,343	\$329		
19092402	Controls, Horiz. Single Wall Steel Tank	6	EA	\$107.25	\$68.47	\$0.00	\$175.73	\$1,054
				\$644	\$411	\$0		
19092528	Tank, 189300 L (50000 gal), Horiz., Steel, Single Wall	1	EA	\$1,502.37	\$3,314.79	\$33,342.67	\$38,159.82	\$38,160
				\$1,502	\$3,315	\$33,343		
19092703	Concrete Covered Basin	1838	SF	\$3.58	\$4.49	\$0.83	\$8.90	\$16,346
				\$6,573	\$8,257	\$1,516		
19092706	Concrete Covered .915M (3') Berm	210	LF	\$15.37	\$34.53	\$7.38	\$57.28	\$12,028
				\$3,228	\$7,250	\$1,549		
<b>Model</b> Storage Tank				<b>\$23,173</b>	<b>\$32,686</b>	<b>\$38,463</b>		<b>\$94,322</b>

Project Name: DESC FAC 1244 Other Operating Fuel Storage

Project No: 1244-12470

## Project/Assembly Detail

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### Cost Report

Facility: CatCode 821112				\$23,173	\$32,686	\$38,463	\$94,322	
Facility: CatCode 82160				Type Supporting				
Model: Storage Tank								
Assembly	Description	Qty	UOM	Mtrl	Labor	Equip	Unit Cost	Total
19092002	Earthwork, Horiz. Single Wall Steel Tank	85	CY	\$0.00	\$15.81	\$12.78	\$28.59	\$2,430
				\$0	\$1,344	\$1,086		
19092102	Concrete, Horiz. Single Wall Steel Tank	23	CY	\$162.85	\$127.78	\$0.00	\$290.63	\$6,685
				\$3,746	\$2,939	\$0		
19092202	Pipes And Fittings, Horiz. Single Wall Steel Tank	337	LF	\$6.51	\$10.18	\$0.00	\$16.69	\$5,626
				\$2,195	\$3,431	\$0		
19092302	Electrical, Horiz. Single Wall Steel Tank	54	LF	\$17.81	\$12.43	\$3.05	\$33.28	\$1,800
				\$963	\$672	\$165		
19092402	Controls, Horiz. Single Wall Steel Tank	4	EA	\$107.25	\$68.47	\$0.00	\$175.73	\$703
				\$429	\$274	\$0		
19092522	Tank, 75700 L (20000 gal), Horiz., Steel, Single Wall	1	EA	\$17,862.09	\$1,699.06	\$701.29	\$20,262.44	\$20,262
				\$17,862	\$1,699	\$701		
19092703	Concrete Covered Basin	735	SF	\$3.58	\$4.49	\$0.83	\$8.90	\$6,538
				\$2,629	\$3,303	\$606		
19092706	Concrete Covered .915M (3') Berm	133	LF	\$15.37	\$34.53	\$7.38	\$57.28	\$7,607
				\$2,042	\$4,586	\$980		
Model Storage Tank				\$29,866	\$18,247	\$3,539	\$51,651	
Facility: CatCode 82160				\$29,866	\$18,247	\$3,539	\$51,651	

**Facility:** CatCode 12483 Propane Tank

**Model:** Storage Tank

				<b>Type Supporting</b>				
<b><u>Assembly</u></b>	<b><u>Description</u></b>	<b><u>Qty</u></b>	<b><u>UOM</u></b>	<b><u>Mtrl</u></b>	<b><u>Labor</u></b>	<b><u>Equip</u></b>	<b><u>Unit Cost</u></b>	<b><u>Total</u></b>
19092002	Earthwork, Horiz. Single Wall Steel Tank	29	CY	\$0.00	\$15.81	\$12.78	\$28.59	\$823
				\$0	\$455	\$368		
19092102	Concrete, Horiz. Single Wall Steel Tank	9.00	CY	\$162.85	\$127.78	\$0.00	\$290.63	\$2,616
				\$1,466	\$1,150	\$0		

Project Name: DESC FAC 1244 Other Operating Fuel Storage

## Project/Assembly Detail

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Project No: 1244-12470

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### Cost Report

<u>Assembly</u>	<u>Description</u>	<u>Qty</u>	<u>UOM</u>	<u>Mtrl</u>	<u>Labor</u>	<u>Equip</u>	<u>Unit Cost</u>	<u>Total</u>
19092202	Pipes And Fittings, Horiz. Single Wall Steel Tank	144	LF	\$6.51 \$938	\$10.18 \$1,466	\$0.00 \$0	\$16.69	\$2,404
19092302	Electrical, Horiz. Single Wall Steel Tank	27	LF	\$17.81 \$482	\$12.43 \$336	\$3.05 \$83	\$33.28	\$901
19092402	Controls, Horiz. Single Wall Steel Tank	2	EA	\$107.25 \$215	\$68.47 \$137	\$0.00 \$0	\$175.73	\$351
19092519	Tank, 18900 L (5000 gal), Horiz., Steel, Single Wall	1	EA	\$6,646.06 \$6,646	\$725.30 \$725	\$139.53 \$140	\$7,510.89	\$7,511
<b>Model</b> Storage Tank				<b>\$9,746</b>	<b>\$4,270</b>	<b>\$590</b>		<b>\$14,606</b>
<b>Facility:</b> CatCode 12483 Propane Tank				<b>\$9,746</b>	<b>\$4,270</b>	<b>\$590</b>		<b>\$14,606</b>

Project Name: DESC FAC 1244 Other Operating Fuel Storage

Project No: 1244-12470

## Project/Assembly Detail

04/28/2009  
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### Cost Report

Facilities Total (Direct Cost): \$113,748 \$79,755 \$49,741 \$243,244

Project Direct Cost: \$243,244

Markups 37.1 % \$90,182

Project Marked Up Cost: \$333,426

Contingency 5.0 % \$16,671

SIOH 5.7 % \$19,956

Project Cost: \$370,053

Design/Indirect Cost: 0.0 % \$0

Total Project Cost: \$370,053

Construction Start 04/01/2009

Construction Midpoint: 07/01/2009

Construction End Date: 10/01/2009

Escalation Rate: 7.22% Based on Construction Midpoint

Database Version: Jan 2006 Cost Book

PACES Version: 7.0.11

#### Costs from PACES

CatCode	Average Size	Marked Up Cost	Number	Pro-rated Cost	Pro-rated Average Size
12470	10966	\$ 31,013	668	\$ 5,610	1983.56
12471	19283	\$ 51,651	1215	\$ 16,993	6344.123
821112	49673	\$ 94,322	291	\$ 7,432	3914.119
82160	20901	\$ 51,651	790	\$ 11,049	4471.105
12483	3680	\$ 14,606	729	\$ 2,883	726.4338
			3693	\$ 43,968	17439.34

DESC RCF Revisions						
FAC	FACTITLE	UM	V.11 RCF \$09	PACES Direct Cost	PACES Unit	Unit Cost
1211	Aircraft Fueling Facility	GM	337.84	\$ 5,211,155	2400	\$ 2,171.31
1212	Aircraft Defueling Facility	GM	337.84	\$ 5,211,155	2400	\$ 2,171.31
1221	Marine Fueling Facility	GM	29.07			\$ 267.42
1231	Vehicle Fueling Facility	OL	13,748.50	\$ 249,800	2	\$ 124,900.00
1241	Aircraft Operating Fuel Storage	GA	1.96	\$ 1,992,868	420000	\$ 4.74
1242	Marine Operating Fuel Storage	GA	5.56	\$ 44,246	3000	\$ 14.75
1243	Vehicle Operating Fuel Storage	GA	5.76	\$ 86,668	25000	\$ 3.47
1244	Other Operating Fuel Storage	GA	9.39	\$ 43,968	17439	\$ 2.52
1251	POL Pipeline	LF	148.05	\$ 438,018	1000	\$ 438.02
1261	Liquid Fuel Loading/Unloading Facility	OL	13,748.50	\$ 456,159	4	\$ 114,039.75
1262	POL Pump Station	SF	681.19	\$ 2,022,665	1008	\$ 2,006.61
4111	Bulk Liquid Fuel Storage	BL	53.05			\$ 65.23



# FAC 1241 Operating Fuel Tank

Design Life and Representative Size	31	Years	26467		GA
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Component	Fre- quency	Estimated Cost per Occurrence	occurr- ences in design life	occurr- ences rounded	Design Life Cost
<b>Tank</b>					
API 653 External Inspection	5	\$ 20,000	6.2	6.0	\$ 120,000
Spot Painting/Minor Repairs	10	\$ 50,000	3.1	3.0	\$ 150,000
API 653 Internal Inspection	10	\$ 60,000	3.1	3.0	\$ 180,000
Repairs found during API 653 External Inspection	10	\$ 25,000	3.1	3.0	\$ 75,000
External Coating	15	\$ 115,000	2.1	2.0	\$ 230,000
Clean Tank	5	\$ 25,000	6.2	6.0	\$ 150,000
PM Cathodic Protection System (Impressed voltage)	1	\$ 2,000	31	31.0	\$ 62,000
<b>Piping</b>				0.0	\$ -
API 570 Inspection	3	\$ 15,000	10	10.0	\$ 150,000
				0.0	\$ -
<b>Controls</b>				0.0	\$ -
Annual Calibration	1	\$ 20,000	31	31.0	\$ 620,000
			S/T		\$ 1,737,000
			Per Year		\$ 56,032
Operator Maintenance	1	632	1	1	\$ 632
					\$ 56,664
<b>\$FY-08</b>			Per Unit		<b>\$ 2.14</b>
<b>\$FY-09</b>					<b>\$ 2.18</b>



99%  
1%

## SUC FAC 1244 Other Operating Fuel Storage