



**United States of America
Department of Homeland Security
United States Coast Guard**

Certification Date:	22 Dec 2023
Expiration Date:	22 Dec 2028

Certificate of Inspection

For ships on international voyages this certificate fulfills the requirements of SOLAS 74 as amended, regulation V/14, for a SAFE MANNING DOCUMENT.

Vessel Name	Official Number	IMO Number	Call Sign	Service
CCL 409	1246098			Tank Barge

Hailing Port	Hull Material	Horsepower	Propulsion
NEW ORLEANS, LA	Steel		
UNITED STATES			

Place Built	Delivery Date	Keel Laid Date	Gross Tons	Net Tons	DWT	Length
PALACIOS, TX	26Sep2013	03Jun2013	R-1619	R-1619		R-297.6
UNITED STATES						10

Owner	Operator
CHEM CARRIERS LLC 1237 HIGHWAY 75 SUNSHINE, LA 70780 UNITED STATES	CHEM CARRIERS LLC 1237 HIGHWAY 75 SUNSHINE, LA 70780 UNITED STATES

This vessel must be manned with the following licensed and unlicensed Personnel. Included in which there must be 0 Certified Lifeboatmen, 0 Certified Tankermen, 0 HSC Type Rating, and 0 GMDSS Operators.

0 Masters	0 Licensed Mates	0 Chief Engineers	0 Oilers
0 Chief Mates	0 First Class Pilots	0 First Assistant Engineers	
0 Second Mates	0 Radio Officers	0 Second Assistant Engineers	
0 Third Mates	0 Able Seamen	0 Third Assistant Engineers	
0 Master First Class Pilot	0 Ordinary Seamen	0 Licensed Engineers	
0 Mate First Class Pilots	0 Deckhands	0 Qualified Member Engineer	

In addition, this vessel may carry 0 Passengers, 0 Other Persons in crew, 0 Persons in addition to crew, and no Others. Total Persons allowed: 0

Route Permitted And Conditions Of Operation:
---Lakes, Bays, and Sounds plus Limited Coastwise---

Also, in fair weather only, not more than twelve (12) miles from shore between St. Marks and Carrabelle, Florida.

This vessel has been granted a fresh water service examination interval in accordance with 46 CFR Table 31.10-21(b); if this vessel is operated in salt water more than six (6) months in any twelve (12) month period, the vessel must be inspected using salt water intervals and the cognizant OCM notified in writing as soon as this change in status occurs.

*****SEE NEXT PAGE FOR ADDITIONAL CERTIFICATE INFORMATION*****

With this Inspection for Certification having been completed at New Orleans, LA, UNITED STATES, the Officer in Charge, Marine Inspection, Sector New Orleans certified the vessel, in all respects, is in conformity with the applicable vessel inspection laws and the rules and regulations prescribed thereunder.

Annual/Periodic/Re-Inspection				This certificate issued by J. H. HART COMMANDER , by direction Officer in Charge, Marine Inspection Sector New Orleans Inspection Zone
Date	Zone	A/P/R	Signature	
14 FEB 2024	NAU-CAL	A	<i>[Signature]</i>	



Certificate of Inspection

Vessel Name: CCL 409

---Hull Exams---

Exam Type	Next Exam	Last Exam	Prior Exam
DryDock	31Oct2033	27Nov2023	12Oct2018
Internal Structure	31Oct2028	27Nov2023	12Oct2018

--- Liquid/Gas/Solid Cargo Authority/Conditions ---

Authorization: GRADE "A" AND LOWER AND SPECIFIED HAZARDOUS CARGOES

Total Capacity	Units	Highest Grade Type	Part151 Regulated	Part153 Regulated	Part154 Regulated
28308	Barrels	A	Yes	No	No

Hazardous Bulk Solids Authority

Not Authorized

Loading Constraints - Structural

Tank Number	Max Cargo Weight per Tank (short tons)	Maximum Density (lbs/gal)
1 P/S	673	13.57
2 P/S	819	13.57
3 P/S	725	13.57

Loading Constraints - Stability

Hull Type	Maximum Load (short tons)	Maximum Draft (ft/in)	Max Density (lbs/gal)	Route Description
II	3850	10ft 3in	13.57	LBS, LC
II	3850	10ft 3in	13.57	R
III	4222	11ft 0in	13.57	LBS, LC
III	4222	11ft 0in	13.57	R

Conditions Of Carriage

Only those specified hazardous cargoes named in the vessel's Cargo Authority Attachment (CAA), Serial# C1-1302698, dated August 5, 2013, and Grade "A" and lower cargoes may be carried, and then only in the tanks indicated.

Per 46 CFR 150.130, the Person in Charge of the vessel is responsible for ensuring that the compatibility requirements of 46 CFR 150 are met. Cargoes must be checked for compatibility using figures, tables and appendices of 46 CFR 150 in conjunction with the compatibility group numbers from the "COMPAT GRP" column listed in the vessel's CAA.

When the vessel is carrying cargoes containing greater than 0.5% benzene, the Person In Charge is responsible for ensuring the provisions of 46 CFR 197, Subpart C are applied.

Stability and Trim

Cargo tanks must be loaded uniformly whenever a 46 CFR Subchapter "O" cargo is carried; for trim purposes, the weight of cargo in each tank may exceed the uniformly loaded tank cargo weight by at most 5 percent.

The maximum density of cargo which may be filled to the tank top is 13.57 lbs/gal. Cargoes with higher densities, up to 8.74 lbs/gal, may be carried as slack loads, but shall not exceed the tank weight limits as listed above.

Vapor Control Authorization



Certificate of Inspection

Vessel Name: CCL 409

In accordance with 46 CFR 39, excluding 46 CFR 39.4000, this vessel's vapor control system has been inspected to the plans approved by Marine Safety Center letter Serial# C1- 1302698 dated August 5, 2013, and the list of authorized cargoes on the CAA, Serial# C1- 1302698 dated August 5, 2013, and found acceptable for collection of bulk liquid cargo vapors annotated with "Yes" in the CAA's VCS column.

In accordance with 46 CFR Part 39.1017 and 39.5001(e) this vessel's VCS has been evaluated and approved for multi-breasted tandem loading with other vessels specifically approved to tandem load with this vessel.

--- Inspection Status ---

Cargo Tanks

Tank Id	Internal Exam			External Exam		
	Previous	Last	Next	Previous	Last	Next
1 P/S	12Oct2018	27Nov2023	31Oct2033	-	-	-
2 P/S	12Oct2018	27Nov2023	31Oct2033	-	-	-
3 P/S	12Oct2018	27Nov2023	31Oct2033	-	-	-
			Hydro Test			
Tank Id	Safety Valves		Previous	Last	Next	
1 P/S	-	-	-	-	-	
2 P/S	-	-	-	-	-	
3 P/S	-	-	-	-	-	

---Conditional Portable Fire Extinguisher Requirements---

Required Only During Transfer of Cargo or Operation of Barge Machinery

--- Fire Fighting Equipment ---

Fire Extinguishers - Hand portable and semi-portable

Quantity	Class Type
2	40-B

END



Certificate of Inspection

Cargo Authority Attachment

Vessel Name: **CCL 409**
Official #: 1246098

Shipyard: Tres Palacios
Hull #: 145

46 CFR 151 Tank Group Characteristics

Tank Group Information		Cargo Identification			Tanks			Cargo Transfer		Environmental Control		Fire Protection		Special Requirements				
Tnk Grp	Tanks in Group	Density	Press.	Temp.	Hull Type	Cargo Seg Tank	Type	Vent	Gauge	Pipe Class	Cont	Tanks	Handling Space	Provided	General	Materials of Construction	Elec Haz	Temp Cont
A	#1P/S, #2P/S, #3P/S	13.6	Atmos.	Amb.	II	1ii 2ii	Integral Gravity	PV	Closed	II	G-1	NR	NA	Portable	.50-31, .50-60, .50-70(a), .50-70(b), .50-73,	55-1(b), (c), (e), (f), (j), 56-1(a), (b), (c), (d), (e), (f), (g).	NR	No

- Notes: 1. Under Environmental Control, Tanks, NR means that the tank group is suitable only for those cargoes which require no environmental control in the cargo tanks.
2. Under Environmental Control, Handling Space, NR means that the tank group is suitable only for those cargoes which require no environmental control in the cargo handling space. NA means that the vessel does not have a cargo control space, and this requirement is not applied.
3. Under Electrical Hazard Class, NA means that the tank group is suitable only for those cargoes which have no electrical hazard class requirement. NR means that the vessel has no electrical equipment located in a hazardous location.

List of Authorized Cargoes

Cargo Identification						Conditions of Carriage					
Name	Chem Code	Compat Group No	Sub Chapter	Grade	Hull Type	Tank Group	Vapor Recovery App'd (Y or N)	VCS Category	Special Requirements in 46 CFR 151 General and Mat'l's of	Insp. Period	

Authorized Subchapter O Cargoes

Acetonitrile	ATN	37	O	C	III	A	Yes	3	No	G
Acrylonitrile	ACN	15 ²	O	C	II	A	Yes	4	.50-70(a), .55-1(e)	G
Adiponitrile	ADN	37	O	E	II	A	Yes	1	No	G
Alkyl(C7-C9) nitrates	AKN	34 ²	O	NA	III	A	No	N/A	.50-81, .50-86	G
Aminoethylethanolamine	AEE	8	O	E	III	A	Yes	1	.55-1(b)	G
Ammonium bisulfite solution (70% or less)	ABX	43 ²	O	NA	III	A	No	N/A	.50-73, .56-1(a), (b), (c)	G
Ammonium hydroxide (28% or less NH3)	AMH	6	O	NA	III	A	No	N/A	.56-1(a), (b), (c), (f), (g)	G
Anthracene oil (Coal tar fraction)	AHO	33	O	NA	II	A	No	N/A	No	G
Benzene	BNZ	32	O	C	III	A	Yes	1	.50-60	G
Benzene or hydrocarbon mixtures (having 10% Benzene or more)	BHB	32 ²	O	C	III	A	Yes	1	.50-60	G
Benzene or hydrocarbon mixtures (containing Acetylene and 10% Benzene or more)	BHA	32 ²	O	C	III	A	Yes	1	.50-60, .56-1(b), (d), (f), (g)	G
Benzene, Toluene, Xylene mixtures (10% Benzene or more)	BTX	32	O	B/C	III	A	Yes	1	.50-60	G
Butyl acrylate (all isomers)	BAR	14	O	D	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G
Butyl methacrylate	BMH	14	O	D	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G
Butyraldehyde (all isomers)	BAE	19	O	C	III	A	Yes	1	.55-1(h)	G
Camphor oil (light)	CPO	18	O	D	II	A	No	N/A	No	G
Carbon tetrachloride	CBT	36	O	NA	III	A	No	N/A	No	G
Caustic potash solution	CPS	5 ²	O	NA	III	A	No	N/A	.50-73, .55-1(j)	G
Caustic soda solution	CSS	5 ²	O	NA	III	A	No	N/A	.50-73, .55-1(j)	G
Chemical Oil (refined, containing phenolics)	COD	21	O	E	II	A	No	N/A	.50-73	G
Chlorobenzene	CRB	36	O	D	III	A	Yes	1	No	G
Chloroform	CRF	36	O	NA	III	A	Yes	3	No	G
Coal tar naphtha solvent	NCT	33	O	D	III	A	Yes	1	.50-73	G
Creosote	CCW	21 ²	O	E	III	A	Yes	1	No	G
Cresols (all isomers)	CRS	21	O	E	III	A	Yes	1	No	G
Cresylate spent caustic	CSC	5	O	NA	III	A	No	N/A	.50-73, .55-1(b)	G
Cresylic acid tar	CRX		O	E	III	A	Yes	1	.55-1(f)	G
Crotonaldehyde	CTA	19 ²	O	C	II	A	Yes	4	.55-1(h)	G
Crude hydrocarbon feedstock (containing Butyraldehydes and Ethylpropyl acrolein)	CHG		O	C	III	A	No	N/A	No	G
Cyclohexanone	CCH	18	O	D	III	A	Yes	1	.56-1(a), (b)	G
Cyclohexanone, Cyclohexanol mixture	CYX	18 ²	O	E	III	A	Yes	1	.56-1 (b)	G
Cyclohexylamine	CHA	7	O	D	III	A	Yes	1	.56-1(a), (b), (c), (g)	G
Cyclopentadiene, Styrene, Benzene mixture	CSB	30	O	D	III	A	Yes	1	.50-60, .56-1(b)	G

*** This document is only valid when attached to, and referenced by a current, valid Certificate of Inspection. ***



Certificate of Inspection

Cargo Authority Attachment

Vessel Name: CCL 409

Official #: 1246098

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Shipyard: Tres Palacios

Hull #: 145

Cargo Identification						Conditions of Carriage					
Name	Chem Code	Compat Group No	Sub Chapter	Grade	Hull Type	Tank Group	Vapor Recovery		Special Requirements in 46 CFR 151 General and Mat'ls of	Insp. Period	
							App'd (Y or N)	VCS Category			
iso-Decyl acrylate	IAI	14	O	E	III	A	Yes	2	.50-70(a), .50-81(a), (b), .55-1(c)	G	
Dichlorobenzene (all isomers)	DBX	36	O	E	III	A	Yes	3	.56-1(a), (b)	G	
1,1-Dichloroethane	DCH	36	O	C	III	A	Yes	1	No	G	
2,2'-Dichloroethyl ether	DEE	41	O	D	II	A	Yes	1	.55-1(f)	G	
Dichloromethane	DCM	36	O	NA	III	A	Yes	5	No	G	
2,4-Dichlorophenoxyacetic acid, diethanolamine salt solution	DDE	43	O	E	III	A	No	N/A	.56-1(a), (b), (c), (g)	G	
2,4-Dichlorophenoxyacetic acid, dimethylamine salt solution	DAD	0 ^{1,2}	O	A	III	A	No	N/A	.56-1(a), (b), (c), (g)	G	
2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt solution	DTI	43 ²	O	E	III	A	No	N/A	.56-1(a), (b), (c), (g)	G	
1,1-Dichloropropane	DPB	36	O	C	III	A	Yes	3	No	G	
1,2-Dichloropropane	DPP	36	O	C	III	A	Yes	3	No	G	
1,3-Dichloropropane	DPC	36	O	C	III	A	Yes	3	No	G	
1,3-Dichloropropene	DPU	15	O	D	II	A	Yes	4	No	G	
Dichloropropene, Dichloropropane mixtures	DMX	15	O	C	II	A	Yes	1	No	G	
Diethanolamine	DEA	8	O	E	III	A	Yes	1	.55-1(c)	G	
Diethylamine	DEN	7	O	C	III	A	Yes	3	.55-1(c)	G	
Diethylenetriamine	DET	7 ²	O	E	III	A	Yes	1	.55-1(c)	G	
Diisobutylamine	DBU	7	O	D	III	A	Yes	3	.55-1(c)	G	
Diisopropanolamine	DIP	8	O	E	III	A	Yes	1	.55-1(e)	G	
Diisopropylamine	DIA	7	O	C	II	A	Yes	3	.55-1(c)	G	
N,N-Dimethylacetamide	DAC	10	O	E	III	A	Yes	3	.56-1(b)	G	
Dimethylethanolamine	DMB	8	O	D	III	A	Yes	1	.56-1(b), (c)	G	
Dimethylformamide	DMF	10	O	D	III	A	Yes	1	.55-1(e)	G	
Di-n-propylamine	DNA	7	O	C	II	A	Yes	3	.55-1(c)	G	
Dodecyldimethylamine, Tetradecyldimethylamine mixture	DOT	7	O	E	III	A	No	N/A	.56-1(b)	G	
Dodecyl diphenyl ether disulfonate solution	DOS	43	O	#	II	A	No	N/A	No	G	
EE Glycol Ether Mixture	EEG	40	O	D	III	A	No	N/A	No	G	
Ethanolamine	MEA	8	O	E	III	A	Yes	1	.55-1(c)	G	
Ethyl acrylate	EAC	14	O	C	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G	
Ethylamine solution (72% or less)	EAN	7	O	A	II	A	No	N/A	.55-1(b)	G	
N-Ethylbutylamine	EBA	7	O	D	III	A	Yes	3	.55-1(b)	G	
N-Ethylcyclohexylamine	ECC	7	O	D	III	A	Yes	1	.55-1(b)	G	
Ethylene cyanohydrin	ETC	20	O	E	III	A	Yes	1	No	G	
Ethylenediamine	EDA	7 ²	O	D	III	A	Yes	1	.55-1(c)	G	
Ethylene dichloride	EDC	36 ²	O	C	III	A	Yes	1	No	G	
Ethylene glycol hexyl ether	EGH	40	O	E	III	A	No	N/A	No	G	
Ethylene glycol monoalkyl ethers	EGC	40	O	D/E	III	A	Yes	1	No	G	
Ethylene glycol propyl ether	EGP	40	O	E	III	A	Yes	1	No	G	
2-Ethylhexyl acrylate	EAI	14	O	E	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G	
Ethyl methacrylate	ETM	14	O	D/E	III	A	Yes	2	.50-70(a)	G	
2-Ethyl-3-propylacrolein	EPA	19 ²	O	E	III	A	Yes	1	No	G	
Formaldehyde solution (37% to 50%)	FMS	19 ²	O	D/E	III	A	Yes	1	.55-1(h)	G	
Furfural	FFA	19	O	D	III	A	Yes	1	.55-1(h)	G	
Glutaraldehyde solution (50% or less)	GTA	19	O	NA	III	A	No	N/A	No	G	
Hexamethylenediamine solution	HMC	7	O	E	III	A	Yes	1	.55-1(c)	G	
Hexamethyleneimine	HMI	7	O	C	II	A	Yes	1	.56-1(b), (c)	G	
Hydrocarbon 5-9	HFN		O	C	III	A	Yes	1	.50-70(a), .50-81(a), (b)	G	
Isoprene	IPR	30	O	A	III	A	No	N/A	.50-70(a), .50-81(a), (b)	G	
Isoprene, Pentadiene mixture	IPN		O	B	III	A	No	N/A	.50-70(a), .55-1(c)	G	



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Cargo Authority Attachment

Vessel Name: CCL 409

Shipyard: Tres Palacios

Official #: 1246098

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Hull #: 145

Cargo Identification						Conditions of Carriage					
Name	Chem Code	Compat Group No	Sub Chapter	Grade	Hull Type	Tank Group	Vapor Recovery		Special Requirements in 46 CFR 151 General and Mat'l's of	Insp. Period	
							App'd (Y or N)	VCS Category			
Kraft pulping liquors (free alkali content 3% or more)(including: Black, Green, or White liquor)	KPL	5	O	NA	III	A	No	N/A	.50-73, .56-1(a), (e), (g)	G	
Mesityl oxide	MSO	18 ²	O	D	III	A	Yes	1	No	G	
Methyl acrylate	MAM	14	O	C	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G	
Methylcyclopentadiene dimer	MCK	30	O	C	III	A	Yes	1	No	G	
Methyl diethanolamine	MDE	8	O	E	III	A	Yes	1	.56-1(b), (c)	G	
2-Methyl-5-ethylpyridine	MEP	9	O	E	III	A	Yes	1	.55-1(e)	G	
Methyl methacrylate	MMM	14	O	C	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G	
2-Methylpyridine	MPR	9	O	D	III	A	Yes	3	.55-1(e)	G	
alpha-Methylstyrene	MSR	30	O	D	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G	
Morpholine	MPL	7 ²	O	D	III	A	Yes	1	.55-1(e)	G	
Nitroethane	NTE	42	O	D	II	A	No	N/A	.50-81, .56-1(b)	G	
1- or 2-Nitropropane	NPM	42	O	D	III	A	Yes	1	.50-81	G	
1,3-Pentadiene	PDE	30	O	A	III	A	No	N/A	.50-70(a), .50-81	G	
Perchloroethylene	PER	36	O	NA	III	A	No	N/A	No	G	
Polyethylene polyamines	PEB	7 ²	O	E	III	A	Yes	1	.55-1(e)	G	
iso-Propanolamine	MPA	8	O	E	III	A	Yes	1	.55-1(e)	G	
Propanolamine (iso-, n-)	PAX	8	O	E	III	A	Yes	1	.56-1(b), (c)	G	
iso-Propylamine	IPP	7	O	A	II	A	Yes	5	.55-1(c)	G	
Pyridine	PRD	9	O	C	III	A	Yes	1	.55-1(e)	G	
Sodium acetate, Glycol, Water mixture (3% or more Sodium Hydroxide)	SAP		O		III	A	No	N/A	.50-73, .55-1(f)	G	
Sodium aluminate solution (45% or less)	SAU	5	O	NA	III	A	No	N/A	.50-73, .56-1(a), (b), (c)	G	
Sodium chlorate solution (50% or less)	SDD	0 ^{1,2}	O	NA	III	A	No	N/A	.50-73	G	
Sodium hypochlorite solution (20% or less)	SHQ	5	O	NA	III	A	No	N/A	.50-73, .56-1(a), (b)	G	
Sodium sulfide, hydrosulfide solution (H2S 15 ppm or less)	SSH	0 ^{1,2}	O	NA	III	A	Yes	1	.50-73, .55-1(b)	G	
Sodium sulfide, hydrosulfide solution (H2S greater than 15 ppm but less than 200 ppm)	SSI	0 ^{1,2}	O	NA	III	A	No	N/A	.50-73, .55-1(b)	G	
Sodium sulfide, hydrosulfide solution (H2S greater than 200 ppm)	SSJ	0 ^{1,2}	O	NA	II	A	No	N/A	.50-73, .55-1(b)	G	
Styrene (crude)	STX		O	D	III	A	Yes	2	No	G	
Styrene monomer	STY	30	O	D	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G	
1,1,2,2-Tetrachloroethane	TEC	36	O	NA	III	A	No	N/A	No	G	
Tetraethylenepentamine	TTP	7	O	E	III	A	Yes	1	.55-1(c)	G	
Tetrahydrofuran	THF	41	O	C	III	A	Yes	1	.50-70(b)	G	
Toluenediamine	TDA	9	O	E	II	A	No	N/A	.50-73, .56-1(a), (b), (c), (g)	G	
1,2,4-Trichlorobenzene	TCB	36	O	E	III	A	Yes	1	No	G	
1,1,2-Trichloroethane	TCM	36	O	NA	III	A	Yes	1	.50-73, .56-1(a)	G	
Trichloroethylene	TCL	36 ²	O	NA	III	A	Yes	1	No	G	
1,2,3-Trichloropropane	TCN	36	O	E	II	A	Yes	3	.50-73, .56-1(a)	G	
Triethanolamine	TEA	8 ²	O	E	III	A	Yes	1	.55-1(b)	G	
Triethylamine	TEN	7	O	C	II	A	Yes	3	.55-1(e)	G	
Triethylenetetramine	TET	7 ²	O	E	III	A	Yes	1	.55-1(b)	G	
Triphenylborane (10% or less), caustic soda solution	TPB	5	O	NA	III	A	No	N/A	.56-1(a), (b), (c)	G	
Trisodium phosphate solution	TSP	5	O	NA	III	A	No	N/A	.50-73, .56-1(a), (c)	G	
Urea, Ammonium nitrate solution (containing more than 2% NH3)	UAS	6	O	NA	III	A	No	N/A	.56-1(b)	G	
Vanillin black liquor (free alkali content, 3% or more).	VBL	5	O	NA	III	A	No	N/A	.50-73, .56-1(a), (c), (g)	G	
Vinyl acetate	VAM	13	O	C	III	A	Yes	2	.50-70(a), .50-81(a), (b)	G	
Vinyl neodecanate	VND	13	O	E	III	A	No	N/A	.50-70(a), .50-81(a), (b)	G	
Vinyltoluene	VNT	13	O	D	III	A	Yes	2	.50-70(a), .50-81, .56-1(a), (b), (c), (G	



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Cargo Authority Attachment

Vessel Name: CCL 409

Official #: 1246098

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Shipyard: Tres Palacios

Hull #: 145

Cargo Identification						Conditions of Carriage				
Name	Chem Code	Compat Group No	Sub Chapter	Grade	Hull Type	Tank Group	Vapor Recovery		Special Requirements in 46 CFR 151 General and Mat'ls of	Insp. Period
							App'd (Y or N)	VCS Category		
Subchapter D Cargoes Authorized for Vapor Control										
Acetone	ACT	18 ²	D	C		A	Yes	1		
Acetophenone	ACP	18	D	E		A	Yes	1		
Alcohol(C12-C16) poly(1-6)ethoxylates	APU	20	D	E		A	Yes	1		
Alcohol(C6-C17)(secondary) poly(7-12)ethoxylates	AEB	20	D	E		A	Yes	1		
Amyl acetate (all isomers)	AEC	34	D	D		A	Yes	1		
Amyl alcohol (iso-, n-, sec-, primary)	AAI	20	D	D		A	Yes	1		
Benzyl alcohol	BAL	21	D	E		A	Yes	1		
Brake fluid base mixtures (containing Poly(2-8)alkylene(C2-C3) glycols, Polyalkylene(C2-C10) glycol monoalkyl(C1-C4) ethers, and their borate esters)	BFX	20	D	E		A	Yes	1		
Butyl acetate (all isomers)	BAX	34	D	D		A	Yes	1		
Butyl alcohol (iso-)	IAL	20 ²	D	D		A	Yes	1		
Butyl alcohol (n-)	BAN	20 ²	D	D		A	Yes	1		
Butyl alcohol (sec-)	BAS	20 ²	D	C		A	Yes	1		
Butyl alcohol (tert-)	BAT		D	C		A	Yes	1		
Butyl benzyl phthalate	BPH	34	D	E		A	Yes	1		
Butyl toluene	BUE	32	D	D		A	Yes	1		
Caprolactam solutions	CLS	22	D	E		A	Yes	1		
Cyclohexane	CHX	31	D	C		A	Yes	1		
Cyclohexanol	CHN	20	D	E		A	Yes	1		
1,3-Cyclopentadiene dimer (molten)	CPD	30	D	D/E		A	Yes	2		
p-Cymene	CMP	32	D	D		A	Yes	1		
iso-Decaldehyde	IDA	19	D	E		A	Yes	1		
n-Decaldehyde	DAL	19	D	E		A	Yes	1		
Decene	DCE	30	D	D		A	Yes	1		
Decyl alcohol (all isomers)	DAX	20 ²	D	E		A	Yes	1		
n-Decylbenzene, see Alkyl(C9+)benzenes	DBZ	32	D	E		A	Yes	1		
Diacetone alcohol	DAA	20 ²	D	D		A	Yes	1		
ortho-Dibutyl phthalate	DPA	34	D	E		A	Yes	1		
Diethylbenzene	DEB	32	D	D		A	Yes	1		
Diethylene glycol	DEG	40 ²	D	E		A	Yes	1		
Diisobutylene	DBL	30	D	C		A	Yes	1		
Diisobutyl ketone	DIK	18	D	D		A	Yes	1		
Diisopropylbenzene (all isomers)	DIX	32	D	E		A	Yes	1		
Dimethyl phthalate	DTL	34	D	E		A	Yes	1		
Diethyl phthalate	DOP	34	D	E		A	Yes	1		
Dipentene	DPN	30	D	D		A	Yes	1		
Diphenyl	DIL	32	D	D/E		A	Yes	1		
Diphenyl, Diphenyl ether mixtures	DDO	33	D	E		A	Yes	1		
Diphenyl ether	DPE	41	D	{E}		A	Yes	1		
Dipropylene glycol	DPG	40	D	E		A	Yes	1		
Distillates: Flashed feed stocks	OFF	33	D	E		A	Yes	1		
Distillates: Straight run	DSR	33	D	E		A	Yes	1		
Dodecene (all isomers)	DOZ	30	D	D		A	Yes	1		
Dodecylbenzene, see Alkyl(C9+)benzenes	DDB	32	D	E		A	Yes	1		
2-Ethoxyethyl acetate	EEA	34	D	D		A	Yes	1		
Ethoxy triglycol (crude)	ETG	40	D	E		A	Yes	1		



Certificate of Inspection

Cargo Authority Attachment

Vessel Name: **CCL 409**

Shipyard: Tres Palacios

Official #: 1246098

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Hull #: 145

Cargo Identification						Conditions of Carriage				
Name	Chem Code	Compat Group No	Sub Chapter	Grade	Hull Type	Tank Group	Vapor Recovery App'd (Y or N)	VCS Category	Special Requirements in 46 CFR 151 General and Mat'ls of	Insp. Period
Ethyl acetate	ETA	34	D	C		A	Yes	1		
Ethyl acetoacetate	EAA	34	D	E		A	Yes	1		
Ethyl alcohol	EAL	20 ²	D	C		A	Yes	1		
Ethylbenzene	ETB	32	D	C		A	Yes	1		
Ethyl butanol	EBT	20	D	D		A	Yes	1		
Ethyl tert-butyl ether	EBE	41	D	C		A	Yes	1		
Ethyl butyrate	EBR	34	D	D		A	Yes	1		
Ethyl cyclohexane	ECY	31	D	D		A	Yes	1		
Ethylene glycol	EGL	20 ²	D	E		A	Yes	1		
Ethylene glycol butyl ether acetate	EMA	34	D	E		A	Yes	1		
Ethylene glycol diacetate	EGY	34	D	E		A	Yes	1		
Ethylene glycol phenyl ether	EPE	40	D	E		A	Yes	1		
Ethyl-3-ethoxypropionate	EEP	34	D	D		A	Yes	1		
2-Ethylhexanol	EHX	20	D	E		A	Yes	1		
Ethyl propionate	EPR	34	D	C		A	Yes	1		
Ethyl toluene	ETE	32	D	D		A	Yes	1		
Formamide	FAM	10	D	E		A	Yes	1		
Furfuryl alcohol	FAL	20 ²	D	E		A	Yes	1		
Gasoline blending stocks: Alkylates	GAK	33	D	A/C		A	Yes	1		
Gasoline blending stocks: Reformates	GRF	33	D	A/C		A	Yes	1		
Gasolines: Automotive (containing not over 4.23 grams lead per gallon)	GAT	33	D	C		A	Yes	1		
Gasolines: Aviation (containing not over 4.86 grams of lead per gallon)	GAV	33	D	C		A	Yes	1		
Gasolines: Casinghead (natural)	GCS	33	D	A/C		A	Yes	1		
Gasolines: Polymer	GPL	33	D	A/C		A	Yes	1		
Gasolines: Straight run	GSR	33	D	A/C		A	Yes	1		
Glycerine	GCR	20 ²	D	E		A	Yes	1		
Heptane (all isomers), see Alkanes (C6-C9) (all isomers)	HMX	31	D	C		A	Yes	1		
Heptanoic acid	HEP	4	D	E		A	Yes	1		
Heptanol (all isomers)	HTX	20	D	D/E		A	Yes	1		
Heptene (all isomers)	HPX	30	D	C		A	Yes	2		
Heptyl acetate	HPE	34	D	E		A	Yes	1		
Hexane (all isomers), see Alkanes (C6-C9)	HXS	31 ²	D	B/C		A	Yes	1		
Hexanoic acid	HXO	4	D	E		A	Yes	1		
Hexanol	HXN	20	D	D		A	Yes	1		
Hexene (all isomers)	HEX	30	D	C		A	Yes	2		
Hexylene glycol	HXG	20	D	E		A	Yes	1		
Isophorone	IPH	18 ²	D	E		A	Yes	1		
Jet fuel: JP-4	JPF	33	D	E		A	Yes	1		
Jet fuel: JP-5 (kerosene, heavy)	JPV	33	D	D		A	Yes	1		
Kerosene	KRS	33	D	D		A	Yes	1		
Methyl acetate	MTT	34	D	D		A	Yes	1		
Methyl alcohol	MAL	20 ²	D	C		A	Yes	1		
Methylamyl acetate	MAC	34	D	D		A	Yes	1		
Methylamyl alcohol	MAA	20	D	D		A	Yes	1		
Methyl amyl ketone	MAK	18	D	D		A	Yes	1		
Methyl tert-butyl ether	MBE	41 ²	D	C		A	Yes	1		
Methyl butyl ketone	MBK	18	D	C		A	Yes	1		

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Certificate of Inspection

Cargo Authority Attachment

Vessel Name: CCL 409

Official #: 1246098

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Shipyard: Tres Palacios

Hull #: 145

Cargo Identification							Conditions of Carriage				
Name	Chem Code	Compat Group No	Sub Chapter	Grade	Hull Type	Tank Group	Vapor Recovery		Special Requirements in 46 CFR 151 General and Mat'ls of	Insp. Period	
							App'd (Y or N)	VCS Category			
Methyl butyrate	MBU	34	D	C		A	Yes	1			
Methyl ethyl ketone	MEK	18 ²	D	C		A	Yes	1			
Methyl heptyl ketone	MHK	18	D	D		A	Yes	1			
Methyl isobutyl ketone	MIK	18 ²	D	C		A	Yes	1			
Methyl naphthalene (molten)	MNA	32	D	E		A	Yes	1			
Mineral spirits	MNS	33	D	D		A	Yes	1			
Myrcene	MRE	30	D	D		A	Yes	1			
Naphtha: Heavy	NAG	33	D	#		A	Yes	1			
Naphtha: Petroleum	PTN	33	D	#		A	Yes	1			
Naphtha: Solvent	NSV	33	D	D		A	Yes	1			
Naphtha: Stoddard solvent	NSS	33	D	D		A	Yes	1			
Naphtha: Varnish makers and painters (75%)	NVM	33	D	C		A	Yes	1			
Nonane (all isomers), see Alkanes (C6-C9)	NAX	31	D	D		A	Yes	1			
Nonene (all isomers)	NON	30	D	D		A	Yes	2			
Nonyl alcohol (all isomers)	NNS	20 ²	D	E		A	Yes	1			
Nonyl phenol	NNP	21	D	E		A	Yes	1			
Nonyl phenol poly(4+)ethoxylates	NPE	40	D	E		A	Yes	1			
Octane (all isomers), see Alkanes (C6-C9)	OAX	31	D	C		A	Yes	1			
Octanoic acid (all isomers)	OAY	4	D	E		A	Yes	1			
Octanol (all isomers)	OCX	20 ²	D	E		A	Yes	1			
Octene (all isomers)	OTX	30	D	C		A	Yes	2			
Oil, fuel: No. 2	OTW	33	D	D/E		A	Yes	1			
Oil, fuel: No. 2-D	OTD	33	D	D		A	Yes	1			
Oil, fuel: No. 4	OFR	33	D	D/E		A	Yes	1			
Oil, fuel: No. 5	OFV	33	D	D/E		A	Yes	1			
Oil, fuel: No. 6	OSX	33	D	E		A	Yes	1			
Oil, misc: Crude	OIL	33	D	C/D		A	Yes	1			
Oil, misc: Diesel	ODS	33	D	D/E		A	Yes	1			
Oil, misc: Gas, high pour	OGP	33	D	E		A	Yes	1			
Oil, misc: Lubricating	OLB	33	D	E		A	Yes	1			
Oil, misc: Residual	ORL	33	D	E		A	Yes	1			
Oil, misc: Turbine	OTB	33	D	E		A	Yes	1			
Pentane (all isomers)	PTY	31	D	A		A	Yes	5			
Pentene (all isomers)	PTX	30	D	A		A	Yes	5			
n-Pentyl propionate	PPE	34	D	D		A	Yes	1			
alpha-Pinene	PIO	30	D	D		A	Yes	1			
beta-Pinene	PIP	30	D	D		A	Yes	1			
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether	PAG	40	D	E		A	Yes	1			
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate	PAF	34	D	E		A	Yes	1			
Polybutene	PLB	30	D	E		A	Yes	1			
Polypropylene glycol	PGC	40	D	E		A	Yes	1			
iso-Propyl acetate	IAC	34	D	C		A	Yes	1			
n-Propyl acetate	PAT	34	D	C		A	Yes	1			
iso-Propyl alcohol	IPA	20 ²	D	C		A	Yes	1			
n-Propyl alcohol	PAL	20 ²	D	C		A	Yes	1			
Propylbenzene (all isomers)	PBY	32	D	D		A	Yes	1			
iso-Propylcyclohexane	IPX	31	D	D		A	Yes	1			
Propylene glycol	PPG	20 ²	D	E		A	Yes	1			

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Certificate of Inspection

Cargo Authority Attachment

Vessel Name: CCL 409

Shipyard: Tres Palacios

Official #: 1246098

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Hull #: 145

Cargo Identification						Conditions of Carriage				
Name	Chem Code	Compat Group No	Sub Chapter	Grade	Hull Type	Tank Group	Vapor Recovery		Special Requirements in 46 CFR 151 General and Mat'l's of	Insp. Period
							App'd (Y or N)	VCS Category		
Propylene glycol methyl ether acetate	PGN	34	D	D		A	Yes	1		
Propylene tetramer	PTT	30	D	D		A	Yes	1		
Sulfolane	SFL	39	D	E		A	Yes	1		
Tetraethylene glycol	TTG	40	D	E		A	Yes	1		
Tetrahydronaphthalene	THN	32	D	E		A	Yes	1		
Toluene	TOL	32	D	C		A	Yes	1		
Tricresyl phosphate (less than 1% of the ortho isomer)	TCP	34	D	E		A	Yes	1		
Triethylbenzene	TEB	32	D	E		A	Yes	1		
Triethylene glycol	TEG	40	D	E		A	Yes	1		
Triethyl phosphate	TPS	34	D	E		A	Yes	1		
Trimethylbenzene (all isomers)	TRE	32	D	{D}		A	Yes	1		
Trixylenyl phosphate	TRP	34	D	E		A	Yes	1		
Undecene	UDC	30	D	D/E		A	Yes	1		
1-Undecyl alcohol	UND	20	D	E		A	Yes	1		
Xylenes (ortho-, meta-, para-)	XLX	32	D	D		A	Yes	1		



Certificate of Inspection

Cargo Authority Attachment

Vessel Name: **CCL 409**
Official #: 1246098

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Shipyard: Tres Palacios
Hull #: 145

Explanation of terms & symbols used in the Table:

Cargo Identification

Name	The proper shipping name as listed in 46 CFR Table 30.25-1, 46 CFR Table 151.05, and 46 CFR Part 153 Table 2.
Chem Code	The three letter designation assigned to the cargo in the Chemical Hazards Response Information System (CHRIS) Manual.
none	Certain mixtures of cargoes may not have a CHRIS Code assigned.
Compatibility Group No.	The cargo reactive group number assigned for compatibility determinations in 46 CFR Part 150 Tables I and II. In accordance with 46 CFR 150.130, the Person-in-Charge of the barge is responsible for ensuring that the compatibility requirements of 46 CFR Part 150 are met. Cargoes must be checked for compatibility using the figures, tables, and appendices of 46 CFR 150 in conjunction with the assigned reactive group number.
Note 1	Because of the very high reactivity or unusual conditions of carriage or potential compatibility problems, this product is not assigned to a specific group in the Compatibility Chart. For additional compatibility information, contact Commandant (CG-3PSO-3), U.S. Coast Guard, 2100 Second Street, SW, Washington, DC 20593-0001. Telephone (202) 372-1425.
Note 2	See Appendix I to 46 CFR Part 150 - exceptions to the compatibility chart.
Subchapter	The subchapter in Title 46 Code of Federal Regulations under which the cargo has been classified.
Subchapter D	Those flammable and combustible liquids listed in 46 CFR Table 30.25-1.
Subchapter O	Those hazardous cargoes listed in 46 CFR Table 151.05 and 46 CFR Part 153 Table 2.
Note 3	Those cargoes listed in 46 CFR Part 153 Table 2 are non-regulated cargoes when carried in bulk on non-oceangoing barges.
Grade	The cargo classification assigned to each flammable or combustible liquid. Grades inside of "[]" indicate a provisional assignment based upon literature sources which were not verified by manufacturers data. The Person-in-Charge shall verify the cargo grade based on Manufacturers data and ensure that the barge is authorized for carriage of that grade of cargo.
A, B, C	Flammable liquid cargoes, as defined in 46 CFR 30-10.22.
D, E	Combustible liquid cargoes, as defined in 46 CFR 30-10.15.
Note 4	The flammability/combustibility grade of these cargoes may vary depending upon the flashpoint and Reid vapor pressure. The Person-in-Charge shall verify the cargo grade based on Manufacturers data and ensure that the barge is authorized for carriage of that grade of cargo.
NA	Those subchapter O cargoes which are not classified as a flammable or combustible liquid.
#	No flammability/combustibility grade has been assigned yet, as the necessary flash point/vapor pressure data for such assignments are presently not available.
Hull Type	The required barge hull classification for carriage of the specified Subchapter O hazardous material cargo, see 46 CFR 151.10-1.
I	Designed to carry products which require the maximum preventive measures to preclude the uncontrolled release of the cargo. See 46 CFR 151.10-1(b)(1).
II	Designed to carry products which require significant preventive measures to preclude the uncontrolled release of cargo. See 46 CFR 151.10-1(b)(3).
III	Designed to carry products of sufficient hazard to require a moderate degree of control. See 46 CFR 151.10-1(b)(4).
NA	Not applicable to barges certificated under Subchapter D.

Conditions of Carriage

Tank Group	The vessel's tank group (as defined in Section 4) which is authorized for carriage of the named cargo.
Vapor Recovery	
Approved (Y or N)	Yes: The vessel's VCS has been reviewed and approved by the MSC to control vapors of the specified cargo. No: The vessel's VCS has been reviewed and is not approved by the MSC to control vapors of the specified cargo.

Conditions of Carriage

Tank Group	The vessel's tank group (as defined under the "46 CFR Tank Group Characteristics" listed on page 1) which is authorized for carriage of the named cargo.
Vapor Recovery	
Approved (Y or N)	Yes: The vessel's VCS has been reviewed and approved by the MSC to control vapors of the specified cargo. No: The vessel's VCS has been reviewed and is not approved by the MSC to control vapors of the specified cargo.

VCS Category:

Category 1	The specified cargo's provisional classification for vapor control systems. (No additional VCS requirements above those for benzene, gasolines and crude oil) All requirements applying to the handling of oil and hazardous materials in Titles 33 and 46 Code of Federal Regulations (CFR) apply to these cargoes. Those specifically dealing with vapor control systems are in 33 CFR 155.750, 33 CFR 156.120, 33 CFR 156.170, 46 CFR 35.35 and 46 CFR 39. The cargo tank venting system calculations (46 CFR 39.20-11) and the pressure drop calculations (46 CFR 39.30-1(b)) must use appropriate friction factors, vapor densities and vapor growth rates.
Category 2	(Polymerizes) Polymerization and residue build-up of these cargoes can adversely affect the vessel by fouling safety components and restricting vapor flow which could lead to cargo tank overpressurization. The vessel's owner must develop a method of ensuring all VCS safety components are functional and polymer build-up is not causing an unsafe condition due to increased pressure in the vapor control piping and cargo tanks. The method shall be acceptable to the local Officer in Charge, Marine Inspection. This is in addition to the requirements of Category 1. Please note that a material not normally considered a monomer can be a problem in detonation.
Category 3	(Highly toxic) VCSs for these toxic cargoes cannot use a spill valve or rupture disk as the primary means to meet the overfill protection requirement of 46 CFR 39.20-9. This requirement is in addition to the requirements of Category 1.
Category 4	(Polymerizes and highly toxic) Must comply with requirements of Categories 1, 2 and 3.
Category 5	(High vapor pressure) VCS pressure drop calculations for cargoes with a vapor pressure greater than 14.7 psia at 115 F must take into account increased vapor-air mixture densities and vapor growth rates as compared to Category 1 cargoes. Consult the Marine Safety Center's VCS Guidelines for further information. This requirement is in addition to the requirements of Category 1.
Category 6	(High vapor pressure and highly toxic) Must comply with requirements of Categories 1, 3 and 5.
Category 7	(High vapor pressure and polymerizes) Must comply with requirements of Categories 1, 2 and 5.
none	The cargo has not been evaluated/classified for use in vapor control systems.

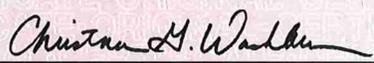


UNITED STATES OF AMERICA

DEPARTMENT OF HOMELAND SECURITY
UNITED STATES COAST GUARD

NATIONAL VESSEL DOCUMENTATION CENTER

CERTIFICATE OF DOCUMENTATION

VESSEL NAME CCL 409		OFFICIAL NUMBER 1246098	IMO OR OTHER NUMBER 145	YEAR COMPLETED 2013	
HAILING PORT NEW ORLEANS LA		HULL MATERIAL STEEL		MECHANICAL PROPULSION NO	
GROSS TONNAGE 1619 GRT	NET TONNAGE 1619 NRT	LENGTH 297.5	BREADTH 54.0	DEPTH 12.0	
PLACE BUILT PALACIOS TX					
OWNERS D STEPHEN LAPLACE, TRUSTEE OF THE FRANK W BANTA JR 2012 GRANTOR TRUST U/A/D 12/28/12			OPERATIONAL ENDORSEMENTS COASTWISE		
MANAGING OWNER D STEPHEN LAPLACE 1237 HWY 75 SUNSHINE LA 70780					
RESTRICTIONS NONE					
ENTITLEMENTS NONE					
REMARKS None					
ISSUE DATE JUNE 12, 2025		 DIRECTOR, NATIONAL VESSEL DOCUMENTATION CENTER			
THIS CERTIFICATE EXPIRES JULY 31, 2026					





National Pollution Funds Center

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Click on the Document Icon  to the left of a record to display a COFR Confirmation in html. You may print the COFR Confirmation by right clicking your mouse and selecting "print" from the list.

VESSEL NAME	VESSEL TYPE	HULL TYPE	GROSS TONNAGE	COFR NUMBER	EFFECTIVE DATE	EXPIRATION DATE	COFR APPLICANT	VIN	INSURANCE CANCEL FLAG
 CCL 409	TANKBARGE D		1619	841310 - 21	10/2/2022	10/2/2025	CHEM CARRIERS, L.L.C	D1246098	

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STOLT BARGE SERVICES

16300 DEZAVALA RD. CHANNELVIEW, TX 77530

PHONE: 713-539-8227

Barge Piping Letter

INSTRUCTIONS: ALL FIELDS ARE REQUIRED. USE N/A ON ANY NON-APPLICABLE LINE.

BARGE OWNER/ BARGE NAME: Chem Carriers LLC CCL-409
LETTER EXPIRATION DATE (ONE YEAR FROM TEST DATE): 7-15-26

NOTE: TEST RESULTS ARE VALID FOR ONE YEAR FROM DATE OF TEST

1. CARGO PIPING AND VALVES (ACTUAL DATE OF TEST): 7-15-25
TEST PRESSURE (188 PSI): 198 psi
2. CARGO RELIEF VALVE (ACTUAL DATE OF TEST): 7-15-25
TEST PRESSURE (125 PSI): 125 psi
3. CARGO PRESSURE GAUGE (ACTUAL DATE OF TEST): 7-15-25
PERCENT OF ACCURACY (%): 98%
4. STEAM PIPING AND RELIEF VALVES (ACTUAL DATE OF TEST): N/A
TEST PRESSURE (125 PSI): N/A

SIGNATURE OF TESTER	<u>Cesar Cedillo</u>
PRINTED NAME OF TESTER	<u>Cesar Cedillo</u>
COMPANY/ LOCATION OF TESTER	<u>Stolt Barge Services Channelview TX</u>



STOLT BARGE SERVICES

16300 DEZAVALA RD. CHANNELVIEW, TX 77530
PHONE: 713-539-8227

BARGE VAPOR TIGHTNESS LETTER

NOTE: TEST RESULTS ARE VALID FOR ONE YEAR FROM DATE OF TEST.

TEST DATE: 7-15-25
BARGE OWNER: Chem Carriers LLC
BARGE NAME / OFFICIAL NUMBER: CCL-409
MAXIMUM LOAD RATE (BPH): 5,000 (BPH)

PRESSURIZE CARGO TANKS AND VAPOR SYSTEM TO 28 INCHES OF WATER USING A MANOMETER . CLOSE ALL AIR VALVES AND ALLOW THE VESSEL TO REMAIN PRESURRIZED FOR 30 MINUTES. USE SOAP TO TEST AND INSPECT FOR LEAKS. AFTER 30 MINUTES, RECORD THE PRESSURE AND TIMES.

TEST CARGO TANKS AND VAPOR SYSTEM TO 28 INCHES OF WATER.
START TIME: 16:15 BEGINNING PRESSURE: 28
END TIME: 16:45 ENDING PRESSURE: 27.8

THIS VESSEL HAS BEEN TESTED IN ACCORDANCE WITH SECTION 61.304F
AND HAS BEEN FOUND TO BE VAPOR TIGHT.

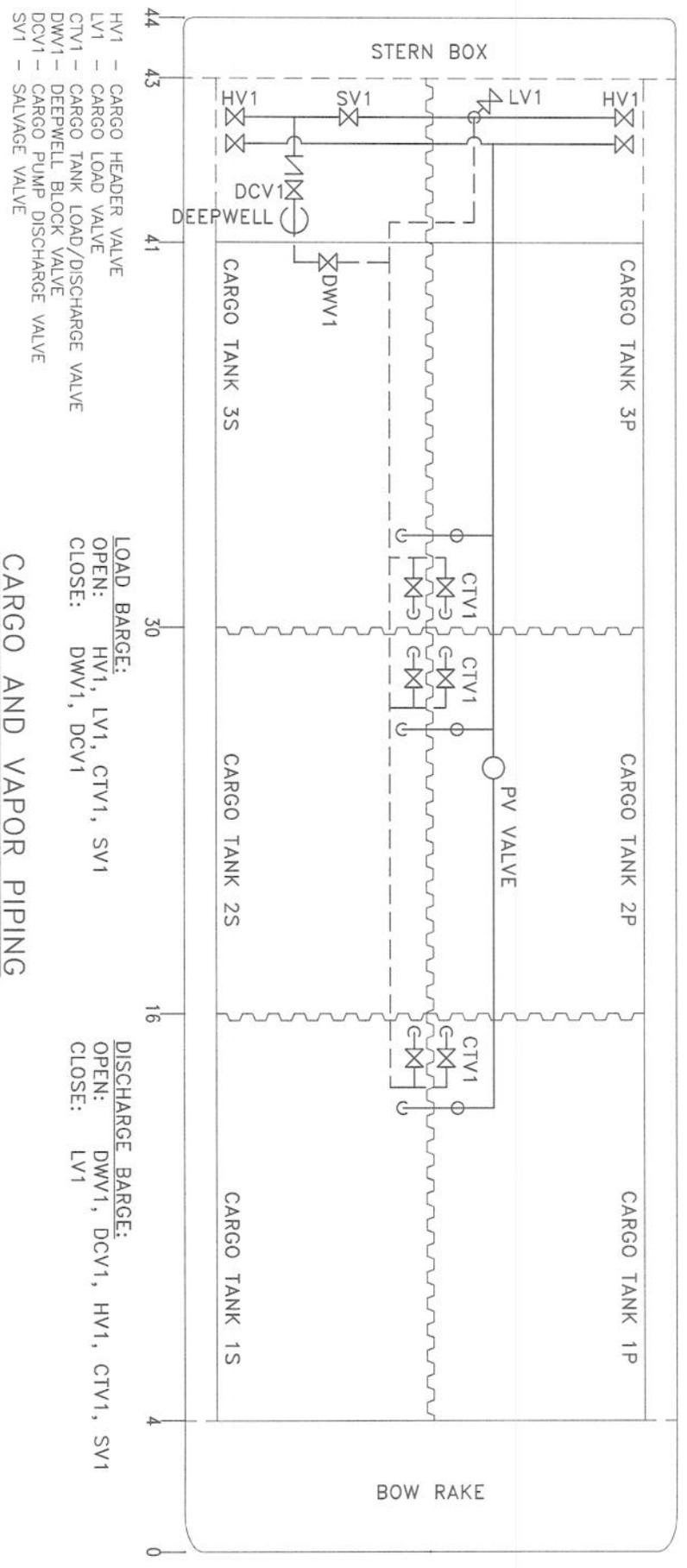
COMPANY OF TESTER: <u>Stolt Barge Services</u>	LOCATION OF TEST: <u>Channelview Tx</u>
PRINTED NAME OF TESTER: <u>Cesar Cedillo</u>	SIGNATURE OF TESTER: <u>Cesar Cedillo</u>
PRINTED NAME OF WITNESS: <u>Xavier Bailey</u>	SIGNATURE OF WITNESS: <u>Xavier Bailey</u>

CHEM CARRIERS

297'-6" X 54' X 12' TANK BARGE - CCL 408 & 409

TANKERMAN'S PLAN

DATE 07/13 DR. SRM



LOAD BARGE:
 OPEN: HV1, LV1, CTV1, SV1
 CLOSE: DWV1, DCV1

DISCHARGE BARGE:
 OPEN: DWV1, DCV1, HV1, CTV1, SV1
 CLOSE: LV1

CARGO AND VAPOR PIPING



Marine Safety Center Form for Tank Vessels Installing a Vapor Control System



1

1. Vessel Name CCL 409; CCL 410
 Official Number _____

Shipyard TRES PALACIOS MARINE
 Hull # 144-745

2. **Purpose:** This form consolidates the information required for VCS approval. Entering the requested information will expedite your approval and significantly decrease the probability the MSC will return the submission for revision.

3. **Tank Design:** Raised Trunk Maximum Design Working Pressure: 3.5 psig
 Flush Deck Existing Raised Trunk Barges need MSC approval letter serial number and date which approved its MDWP _____

4. **Requested Maximum Cargo Transfer Rates**
6,000 bbl/hr loading
6,000 bbl/hr discharging

5. **Requested Maximum Cargo-Air Mixture Vapor Density:**
 List the requested cargoes with the (a) highest vapor density and (b) highest pressure drop. They are not always the same cargo.

a. Cargo Name	<u>PENTANE</u>	<u>0.379</u>	lbm/ft3
b. Cargo Name	<u>dito</u>	<u>0.379</u>	lbm/ft3

6. **VCS Categories Requested (list):** _____

7. **Pressure Drop for the cargo(es) from Section 5 for the following scenarios:**

	Cargo A psi	Cargo B psi
a. Most Remote Cargo Tank to P/V valve	<u>0.266</u>	<u>0.266</u>
b. Most Remote Cargo Tank to VCS Facility Connection	<u>0.401</u>	<u>0.401</u>
c. ΔP across P/V valve @ cargoes' Maximum Transfer Rate	<u>2.772</u>	<u>2.772</u>
d. ΔP across Vacuum P/V @ MTR or Max. Discharge Rate	<u>1.584</u>	<u>1.584</u>
e. ΔP across Spill Valve for Max. Density Cargo at MTR	<u>N.A.</u>	

8. **Pressure Vacuum Valve:**

Manufacturer	<u>ERL SUPERAC</u>	Settings in psig:	
Model/Size	<u>PV6 (MODEL 11)</u>	Pressure-side	<u>3.0</u>
CG Approval Number	<u>162.017/167/3</u>	Vacuum-side	<u>1.0</u>

Include the Manufacturer's ΔP versus Flow for both parts of P/V & Spill Valve:

9. **VCS Pipe Sizes:**
 Longitudinal Header 8 Inches Transverse Headers 8 Inches

10. **Closed Gauging**
 Check the box to signify the vessel will have closed gauging meeting 46 CFR 151.151-10(c). MSC Electrical Branch and the OCMI will verify the closed gauging meets these requirements.

11. **Tank Overfill Protection System** (check appropriate box or boxes and list make/model)

a. High Level/Tank Overfill Alarm	<input checked="" type="checkbox"/>	_____	Setting in psig	_____
b. Overfill Control Shutdown	<input checked="" type="checkbox"/>	_____		
c. Spill Valve	<input type="checkbox"/>	<u>N.A.</u>	Meets ASTM F1271	<input type="checkbox"/>
d. Rupture Disk	<input type="checkbox"/>	<u>N.A.</u>		

If applicable, Calculations demonstrate compliance with 39.20-9(b)(2).

12. Submittal includes a Graph or Table showing the ΔP through the VCS piping from the most remote cargo tank to the facility connection as a function of liquid transfer rate for both cargoes in Section 5.

13. Submittal includes a Graph or Table showing the Facility Pressure @ the vessel's vapor connect versus allowable transfer rate. This graph demonstrates the barge can satisfy 46 CFR 39.30-1(d)(3). See MSC "Guidelines" at www.msc.uscg/hq/msc for an example.

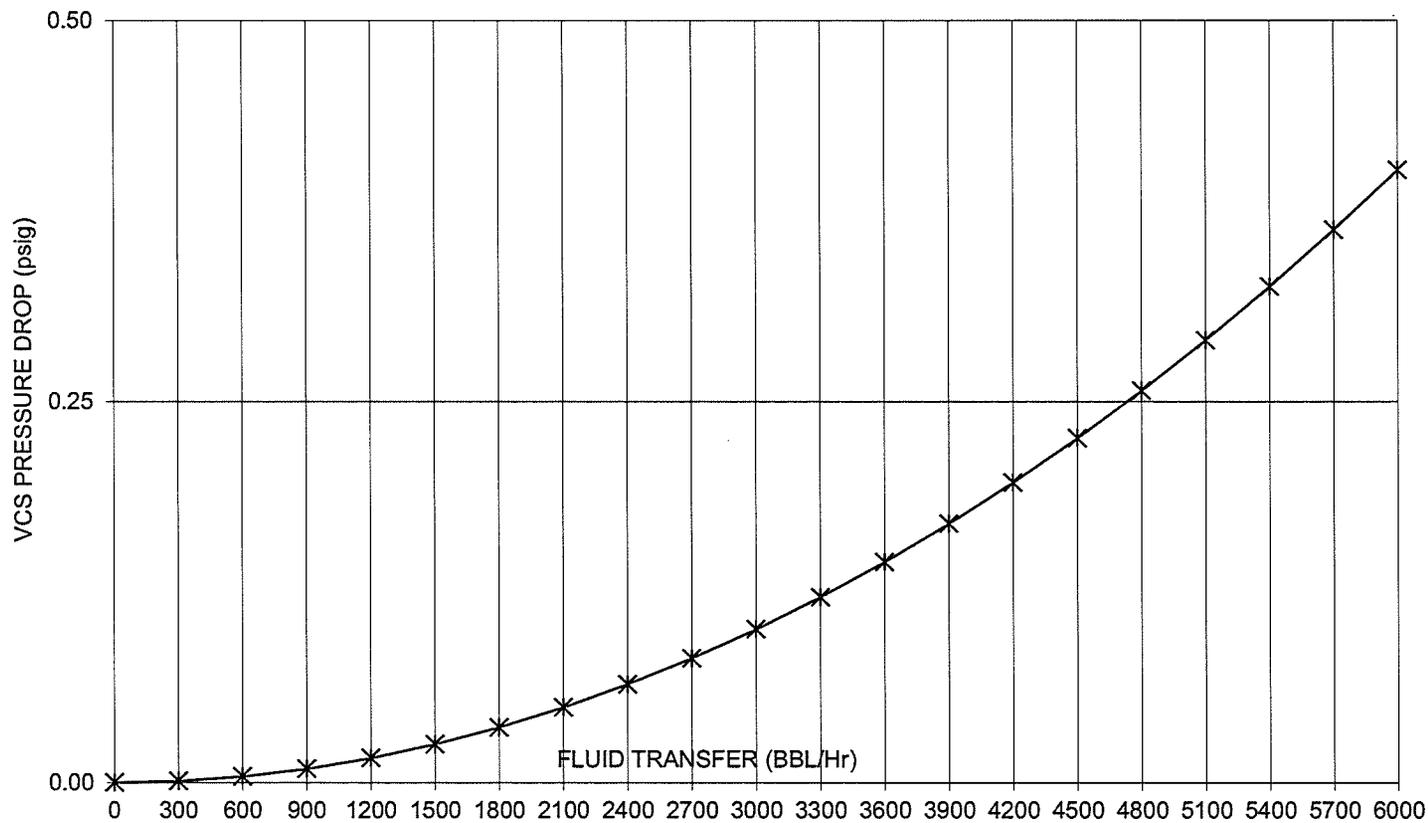
14. Previous VCS approval letters: _____

Vapor Control System (VCS) Calculations

1/16/2013

FIG. 1 - Pressure Drop vs. Flowrate from Farthest Tank to Facility Vapor Collection
for Cargo with Maximum Pressure Drop

—*— Vapor Air-Wt Density @ Greatest Pressure Drop = 0.379 Greatest Vapor Air-Wt Density = 0.379

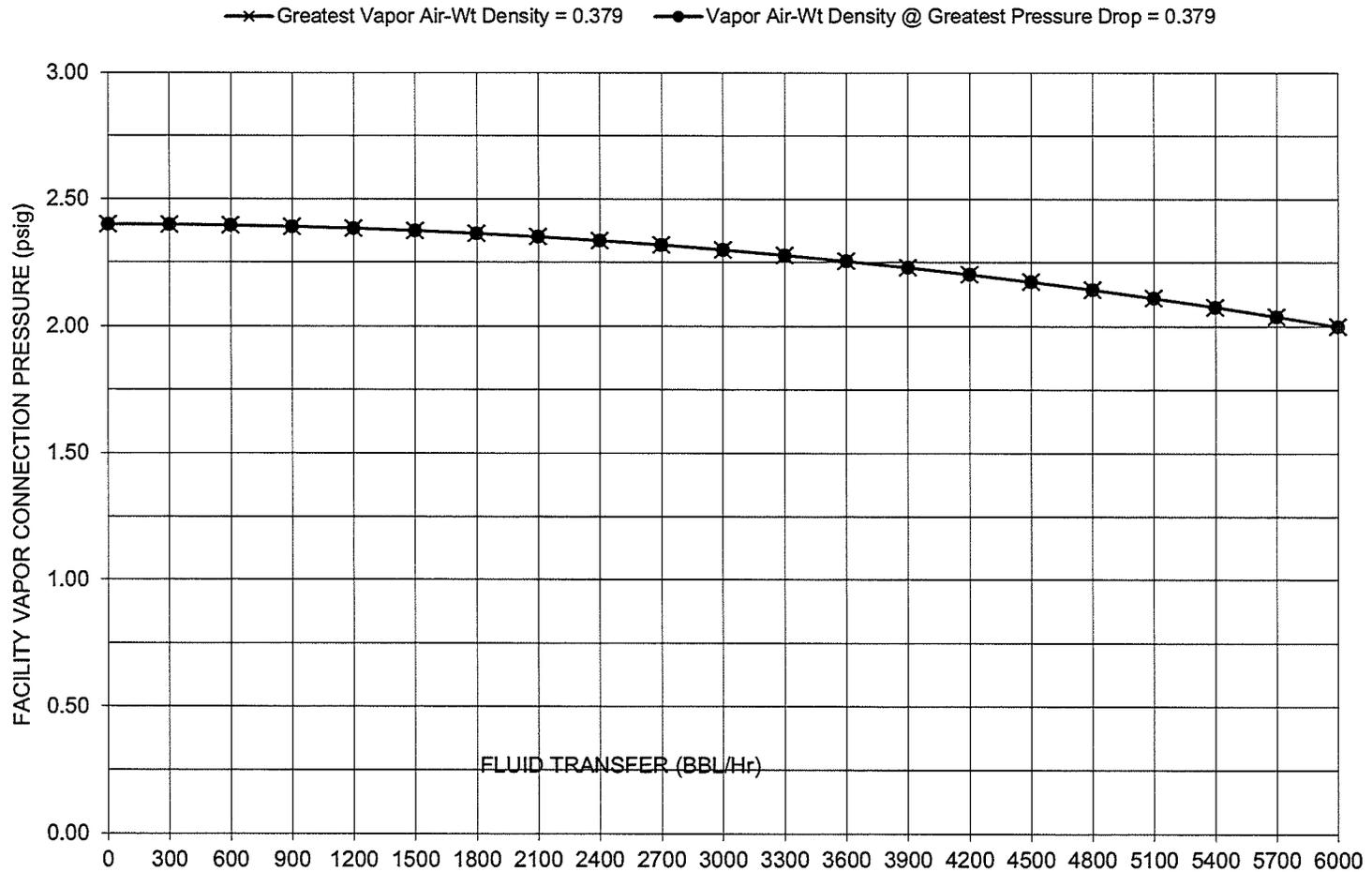


Vapor Control System (VCS)

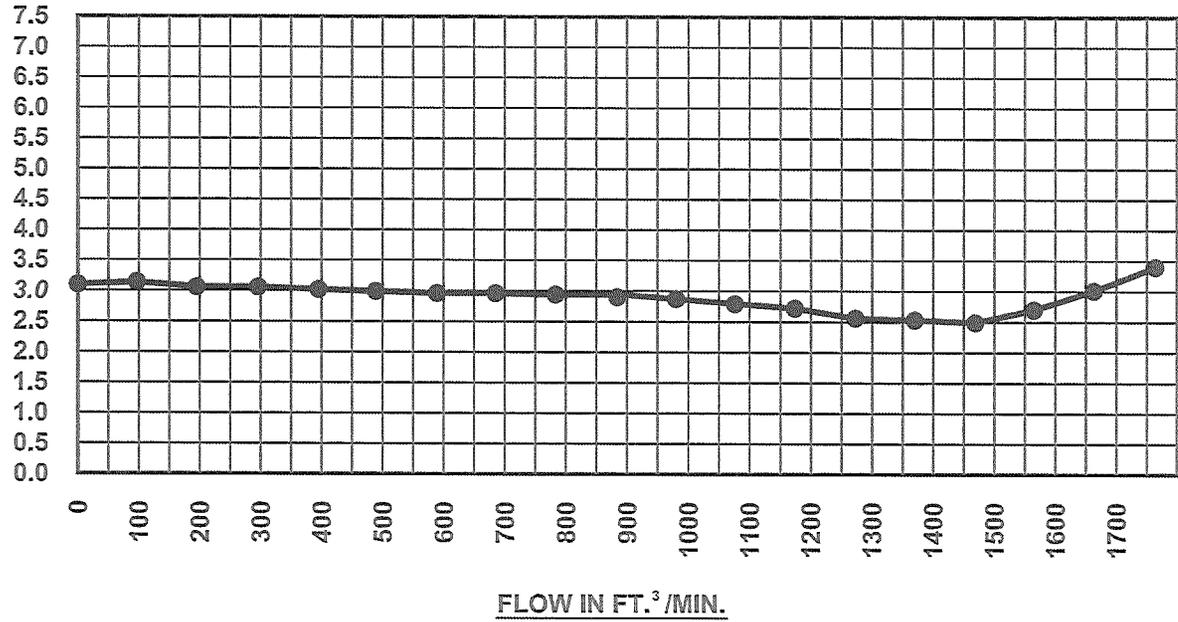
1/16/2013

Calculations

FIG. 2 - Facility Vapor Connection Pressure vs. Maximum Allowable Flowrate based on not Exceeding 80% of the Allowable P/V Valve Setting



P.S.I.

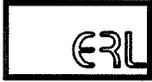


BARRELS PER HOUR	FLOW FT. ³ per MIN.	P.S.I.
------------------	--------------------------------	--------

0	0	3.10
1038	97	3.14
2086	195	3.06
3167	296	3.06
4227	395	3.02
5232	489	2.99
6302	589	2.96
7330	685	2.96
8378	783	2.94
9459	884	2.90
10486	980	2.87
11513	1076	2.79
12562	1174	2.72
13621	1273	2.56
14659	1370	2.53
15718	1469	2.49
16746	1565	2.70
17794	1663	3.01
18875	1764	3.40

Curve for PRESSURE side of 6" PV Valve - 3.0 PSI

CEESI - Colorado Engineering
data based on air flow



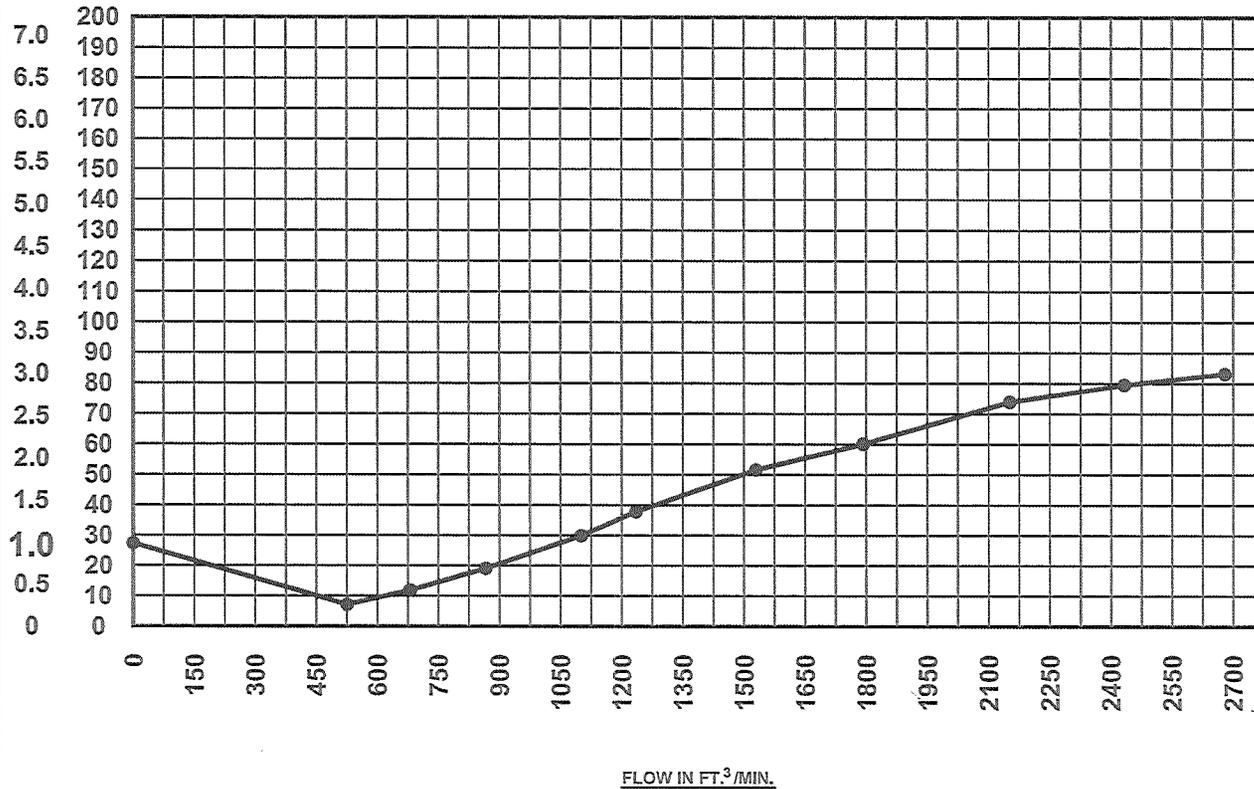
ELECTROMECHANICAL RESEARCH LABORATORIES, INC.
P.O. 1026 NEW ALBANY, IN 47150

DATE 7/12/10
TOLERANCES
.0= +/- .030
.00= +/- .015
.000= +/- .005

DRAWN D. URBAN
APPROVED
SCALE JOB NO.

PART NAME Flow Curve 3.0 PSI Pressure
UNIT NAME 6" PV Valve MDII
DRAWING NO. 193V152B
ITEM NO.

PRESSURE
IN INCHES
OF WATER
P.S.I.



BARRELS PER HOUR	FLOW FT.³/MIN.	PRESSURE IN. OF H ₂ O
------------------	----------------	----------------------------------

5624	526	7.2
7284	681	11.9
9293	867	19.1
11778	1101	29.9
13206	1235	37.8
16348	1529	51.6
19162	1792	60.1
23016	2152	73.9
26018	2433	79.5
28660	2680	83.1

Curve for Vacuum Side
6" PV Valve - 1.0 PSI
data based on air flow



**ELECTROMECHANICAL
RESEARCH LABORATORIES, INC.**
P.O. BOX 1026, NEW ALBANY, IN 47151

DATE
11/29/01

TOLERANCE:
0.0 = +/- 0.030
0.00 = +/- 0.015
0.000 = +/- 0.005

DRAWN
D. URBAN

APPROVED

SCALE

JOB NO.

PART NAME
Flow Curve, 1.0 PSI, Vacuum

UNIT NAME
Marine 6" PV (MD II)

DWG. NO.
333M087B

ITEM NO.

CARGO TRANSFER PROCEDURES

CHEM CARRIERS L.L.C.

TRANSFER FROM BARGE TO DOCK

PARTS

1. PRODUCTS TRANSFERRED
2. DESCRIPTION OF SYSTEM
3. PERSONS ON DUTY
4. PERSONS IN CHARGE
5. EMERGENCY SHUTDOWN
6. TOPPING OFF PROCEDURE
7. COMPLETION OF TRANSFER
8. REPORTING CARGO SPILLS
9. VESSEL CLOSURES
10. PRODUCT DATA
11. Vapor Control Procedures
12. Inert system

Barge CCL 409

PARTS 1. PRODUCTS TRANSFERRED

33 CFR 155.750 (a) (1) (i)

This vessel is certificated for the carriage of grades "A" and lower Sub-Chapter (D) and (O) Products. It has also been certified to carry vapor products. Reference Certificate of Inspection.

PARTS 2. DESCRIPTION OF CARGO TRANSFER SYSTEM

33 CFR 155.750 (a) (2) (i) (ii)

The cargo transfer procedures apply to all Chem Carrier L.L.C. owned or leased tank barges. In most cases other than series built barges, the cargo piping arrangement is usually slightly different on every barge, and for this reason, the piping diagram must be studied before loading or discharging a barge. The basic concept for loading and discharging is fairly standard depending on the location of the pump.

A. (Reference the piping diagram for transfer system arrangement.)

B. PROCEDURES FOR THE CONTAINMENT SYSTEM

33 CFR 155.310 (a) (1) (iv)

33 CFR 155.750 (a) (2) (iii)

- 1). The containment pans are equipped with a drain for the removal of slops to shore facilities:
NEVER DRAIN THE CONTAINMENT TANKS ONTO THE DECK.
- 2). CCL 409 is equipped with a separate containment area for

the cargo trunk top and the aft deck area. Each containment area is equipped with drains and scupper plugs. Plugs should be installed prior to cargo transfer and removed after the cargo transfer is complete. PIC should notify Chem Carriers when containment areas need cleaning or if scupper plugs need replacing. **Never Drain Product captured in containment area overboard.**

PARTS 3. PERSONS ON DUTY DURING TRANSFER

33 CFR 155.750 (a) (3)

Number of persons required on duty during transfer operations:

- A. At no time during the transfer operation will be less than one responsible person on duty. The certified tankerman assigned shall be in charge and responsible for the safe transfer of cargo.

PARTS 4. PERSONS IN CHARGE

The tankerman (person in charge) is responsible for transferring cargo and carrying out related operations on board in an efficient, safe, and pollution free manner. The tankerman whether employed by the towboat, owner, operator, a shore tankerman service, or Chem Carriers L.L.C., shall comply with all Coast Guard, State and local regulations. Tankerman's responsibility shall include but not be limited to the following:

- A. To have on his/her person a valid merchant marine document endorsed as tankerman, certified to handle the grade of cargo to be transferred.
- B. Make a thorough inspection of the barge prior to the start of transfer operation.
- C. To have proper connection of the grounding cable.
- D. The vessel's moorings are adequate to hold during all expected conditions of surge, current, wind, tide, ect., and lines are long enough to allow for surge, tide, wind, changes in draft ect.
- E. Proper hose sizes, lengths, support, and connections.
- F. The condition of fire extinguishers and required number.
- G. The person in charge of transfer operations on the transferring vessel or facility and the person in charge of transferring operations on the receiving vessel or facility agree to begin the transfer operations.
- H. The transfer operation between tank barges and dock facilities should be lighted between sunset and sunrise to comply with the U. S. Coast Guard regulation pertaining to the displaying of lights on barges as required by Title 33.
- I. The PIC (PERSON IN CHARGE) will be responsible for the DOI (declaration of inspection) and DOS (declaration of security).
- J. Always maintain communications with dock or shore personnel with an agreed upon approved system.

PARTS 5: EMERGENCY SHUTDOWN

33 CFR 155.750 (a) (6)

THE EMERGENCY SHUTDOWN IS LOCATED NEAR THE CENTER OF THE BARGE.

- A. In the event of an emergency, transfer operations can be stopped by pulling the remote shutdown cable.
- B. Familiarize yourself with its location and operation prior to transfer.

PARTS 6; TOPPING OFF PROCEDURES

33 CFR 155.750 (a) (7)

In the process of topping off, tanks should be loaded at different levels to top off one at a time. Extra care should be taken to avoid over pressuring the connections, and hoses by closing valves against the receiving line. Since barges and facilities vary in their systems, no standard for topping off exist, but the following should be considered:

- A. The closing of one tank increases the rate of flow to other tanks on the same line.
- B. Always consider temperature and cargo in accordance with the amount of expansion that should be allowed.
- C. Always maintain communications with dock or shore personnel.
- D. A set of dipstick overfill devices have been installed on the CCL 409. Dipsticks can be made operational by releasing the covers or caps. Dipsticks should be used as a visual aid for overfill protection.

PARTS 7: COMPLETION OF TRANSFER

33 CFR 155.750 (a) (8)

Upon the completion of the transfer all pipelines should be drained into cargo tanks. The header valve used during the operation should then be closed, sealed off with a blind flange and shore personnel should seal lines and hatches on vessel.

PARTS 8: REPORTING CARGO SPILLS

33 CFR 155.750 (a) (9)

Should an accidental discharge of product occur, you should consider the following:

- A. Locate the source of the spill and try to stop it, if possible, and safe to do so.

- B. Make an attempt to contain the product if possible.
- C. Notify the Coast Guard. The national Response Center at 1-800-424-8802.
- E. Notify Chem Carriers L.L.C. at (225) 642-0060
- F. If loading, transfer the cargo from the leaking tank to an adjacent tank or back to the dock if safe to do so.
- G. If discharging, pump the product from the leaking tank as quickly as possible if safe to do so.

***When reporting a spill, the tankerman should provide the following information:**

- A. Name (his or her)
- B. Name of Company: (employed by; (contracted by;
- C. Name of Barge.
- D. Spill Location
- E. Specify Product.
- F. Estimate Quantity of Spill
- G. Weather, Tide, Sea and Current Conditions.
- H. Cause of Spill.
- I. Action Being Taken to Contain and Stop Spill

PART 9

CLOSURES ON VESSELS

Upon completion of cargo transfer operations, all tank hatch covers, ullage covers, and gauging device covers shall be dogged down and secured. In addition, the vent drain valves, if installed, should be secured and left in the proper position. All drain valves should be closed, and drip pan covers, if installed, should be made up tight. Covers for void spaces, bow and stern compartments shall be secured at all times and checked for tightness. Closing devices on clean-out hatches and clean-out opening should be checked, especially when the barge is loaded.

PART 10

PRODUCT DATA

See specific MSDS sheets provided with these procedures.

In case of any other emergency, immediately shut down and notify the transferring facility, and Chem Carriers L.L.C. (225) 642-0060 24 Hour Line.

PART 11

VAPOR CONTROL PROCEDURES

This is a guide only and is not intended to replace experience, sound judgment, and a proper assessment of the task at hand.

The tankerman on duty is the acting Designated Person In Charge (PIC) and is responsible for cargo transfer operations and carrying out related operations on barges.

1. Vapor Recovery Transfer Maximum Rate is 4000 BBLs/HR for

subchapter "D" Cargoes and 4000 BBLS/Hr for subchapter "O" Cargoes.

- 1.1 Transfer rates, which exceed these maximums, must be approved by Chem Carriers.
- 1.2 Transfer rates for each cargo tank should not exceed the maximum transfer rate.

2. Pre-transfer Inspection For Vapor Recovery Operations

2.1 Follow the procedures outlined below in addition to the procedures utilized during normal transfers:

2.1.1 Wear personal protective equipment (PPE) as needed for the cargo in the barge when testing P/V and, hooking up hoses, or draining low points.

2.1.2 Ensure that a Certificate of Vapor Tightness is onboard and valid.

2.1.3 Close the low point drain on the port/starboard vapor header, if applicable.

2.1.4 Close the low point drain near the vent stack, if applicable.

2.1.5 Close valve to the vent riser if applicable.

2.1.7 Blinds used for the vapor control manifold should have a hole to accommodate the ½" stud located in the vapor header.

2.1.8 Each cargo tank is fitted with a liquid level gauge stick. Remove the cap, raise the stick, This stick can be monitored visually to avoid overfilling.

2.1.9 Ensure that the last one meter (3.3 feet) of vapor piping before the vapor connection is painted red/yellow/red.

2.1.10 The cross-header should be stenciled with the word "VAPOR" in black letters at least 2" high.

2.1.11 The vapor connection flange should be fixed with a 1" long by 1/2" diameter stud projecting outward from the face of the flange, midway between bolt holes.

2.1.12 The high level alarms/shutdowns are installed near the center of each cargo tank. Dock alarm/shutdown should be connected prior to loading, and plugs located near the forward end of the barge Port and Starboard should be labeled "ALARM/SHUTDOWN SENSOR." High level alarms are set to alarm at 90% of the cargo tanks capacity and Shut downs are set to shut transfer down at 95% of each tanks capacity.

2.1.13 Ensure that the P/V relief valve flame screen, if required, is in place and in good condition prior to testing.

2.1.14 Ensure that the facility has a Letter of Adequacy endorsed as meeting the requirements of 33 CFR Subpart E.

3. Vapor Piping

3.1 The PIC checks the vapor piping diagram.

3.2 Characteristics of a vapor header:

3.2.1 The vapor collection piping system on tank barges is permanently installed and located as close as practical to the loading manifold. The piping system is electrically bonded to the hull and electrically continuous.

3.2.2 The last one meter (3.3 feet) of vapor piping prior to the valve before the vapor connection is painted red/yellow/red. The red bands are 4" wide and the yellow band is 32" wide.

3.2.3 The vapor header is stenciled with the word "VAPOR" in black letters at least 2" high.

3.2.4 The vapor connection flange is to be fixed with a 1" by 1/2" diameter stud projecting outward from the face of the flange. This stud is located at the top of the flange, midway between bolt holes.

3.2.5 When not in use, blank off the vapor headers using a blind flange with a bolt in every hole. Each blind flange used on the vapor piping has a hole drilled to accommodate the pin.

4. Inspection And Verification Of Vent Lines

4.1 The Person in Charge performs the following steps:

4.1.1 Checks the Certificate of Inspection on board the barge;

4.1.2 Locates polymerizing or inhibited cargoes in the section of the COI marked *Specific Hazardous Cargo Authority*;

4.1.3 Refers to the MSDS or Chemical Data Guide on board the vessel to determine what cargoes are subject to polymerization, or what cargoes are inhibited;

4.1.4 Locates the MSDS for the cargo and determines its toxicity and whether or not it is a polymerizing or inhibited cargo; and,

4.1.5 Notifies the Dispatcher and Field Supervisor when polymerization is suspected.

5. Any problems with the Vapor Control system must be reported immediately to the person in charge and Chem Carriers.

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

2703 Martin Luther King Jr. Ave SE
Stop 7516
Washington, DC 20593-7516
Staff Symbol: CG-MER-4 (VRP)
Phone: (202) 372-1005
Fax: (202) 372-8376
Email: vrp@uscg.mil

16460
March 12, 2025

Chem Carriers, L.L.C.
C/O: FOREFRONT EMERGENCY MANAGEMENT, LP
ATTN: ALLIE MARTIN
1730 COTEAU ROAD
HOUMA, LA 70364

Dear Sir or Madam:

Your Vessel Response Plan (Control Number 56041), submitted to meet the requirements of Title 33, Code of Federal Regulations (CFR), Part 155, Subparts D and I, is **approved**. Approval will remain valid until **March 21, 2030**.

The CCL 409 (1246098) is authorized to operate only in the ports or geographic areas indicated in the Captain of the Port zones listed below. If carrying oil as cargo, the vessel is prohibited from handling, storing, transporting, transferring, or lightering oil unless it is operating in full compliance with this plan. Compliance includes ensuring that required resources have been identified and planned for or are in place and available through contract or other approved means. If applicable to your routes, this includes the dispersant and aerial observation requirements of 33 CFR 155.1050.

You are reminded that your chosen salvage and marine firefighting resource provider may have submitted waivers from meeting one or more of the specified response times in accordance with 33 CFR 155.4055. If so, this may be rescinded by the U.S. Coast Guard if the appropriate response resources are not available when the approved waiver expires. You shall continue to assess the adequacy of your chosen salvors and firefighters as required by 33 CFR 155.4050.

The vessel must keep a copy of this approval letter onboard in addition to the minimum sections of the plan as required by 33 CFR 155.1030. In accordance with 33 CFR 155.1070, you are required to review your plan annually and submit plan amendments for approval. As per 33 CFR 155.1070(b), the entire plan must be resubmitted for a comprehensive review and approval six (6) months prior to the expiration date.

APPROVED CAPTAIN OF THE PORT ZONES

CORPUS CHRISTI
HOUMA
HOUSTON-GALVESTON

LOWER MISSISSIPPI RIVER
(MEMPHIS)
MOBILE
NEW ORLEANS

OHIO VALLEY
PORT ARTHUR AND LAKE
CHARLES

UPPER MISSISSIPPI RIVER
(ST. LOUIS)

Sincerely,



CHARRON MCCOMBS

Lieutenant Commander

Acting Chief, Domestic Preparedness & Planning Division

U.S. Coast Guard

By direction

U.S. Department of
Homeland Security

United States
Coast Guard



Commanding Officer
United States Coast Guard
Marine Safety Center

US Coast Guard Stop 7430
2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593-7430
Staff Symbol: MSC-5
Phone: (202) 795-6729
Email: securityplaninfo@uscg.mil

16710
VS-326893
December 3, 2024

Chem Carriers, LLC
Attn: Robert Banta
1237 Hwy 75
Sunshine, LA 70780
robert@chemcarriers.com

Subj: CHEM CARRIERS, LLC VESSELS
VESSEL SECURITY PLAN APPROVAL WITH AMENDMENTS

Ref: (a) Your correspondence dated November 6, 2024
(b) Title 33 Code of Federal Regulations (CFR) Part 104
(c) MSC Vessel Security Plan Approval letter dated October 16, 2024

Dear Mr. Banta:

We have conducted a review of the Vessel Security Plan (VSP) submitted with reference (a) in accordance with reference (b) and it is **“Approved.”**

Your vessel must operate in compliance with this approved VSP and the requirements contained in reference (b). You are reminded to immediately report any deviation from this approved plan to the local Captain of the Port (COTP)/Officer in Charge, Marine Inspection (OCMI).

This approval will remain valid until five years from the date of reference (c) unless rescinded in writing by the local COTP/OCMI. You must review your plan annually and submit any amendments to this office for approval. Please ensure that a copy of the VSP is maintained on board the vessel if manned, or, if unmanned, at a suitable secure location so that it is readily available during an emergency or security incident. You shall make available to the Coast Guard, upon request, this letter, the VSP and any information related to the implementation of the VSP. Our Case Number for this plan is 326893. Please ensure that all future correspondence includes this Case Number.

Sincerely,

K. C. WILLIAMS
Lieutenant Commander, U.S. Coast Guard
Chief, Vessel Security Division
By direction

Enclosures: (1) List of Vessel Security Plan Amendments
(2) List of Vessels Covered

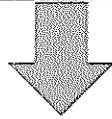
List of Vessels Covered

<u>Vessel Name</u>	<u>Official Number (O.N.)</u>
CCL-1	518612
CCL 2	510107
CCL-3	296363
CCL 4	512519
CCL-5	512520
CCL-6	530996
CCL7	551980
CCL 8	551982
CCL 9	551983
CCL 10	551979
CCL 11	551976
CCL 14	1164451
CCL 15	1164452
CCL 16	1164666
CCL 17	1166179
CCL 18	1168981
CCL 19	1168980
CCL 20	1191598
CCL 21	1191599
CCL 22	1191600
CCL 23	1191601
CCL 24	1196547
CCL 25	1196548
CCL 26	1203816
CCL 27	1203817
CCL 28	1212828
CCL 29	1212829
CCL 30	1305871
CCL 31	1305870
CCL 32	1305869
CCL 33	1305868
CCL 401	1216671
CCL 402	1219910
CCL 403	1231311
CCL 404	1231312
CCL 405	1236867
CCL 406	1236866
CCL 407	1246320
CCL 408	1246097
CCL 409	1246098
CCL 410	1255906
CCL 411	1255907
CCL 414-L	1262941
CCL 415-T	1262942

<u>Vessel Name</u>	<u>Official Number (O.N.)</u>
CCL 416-T	1264691
CCL 417 T	1298307
CCL 418-L	1306896
CCL 419-L	1306897
CCL 420-T	1348560
CCL 421-T	CG1843359
CCL 3202	1089031
HFL 413	1237482
HFL 415	1237483
HFL 435	1236563
HFL 605	1237484

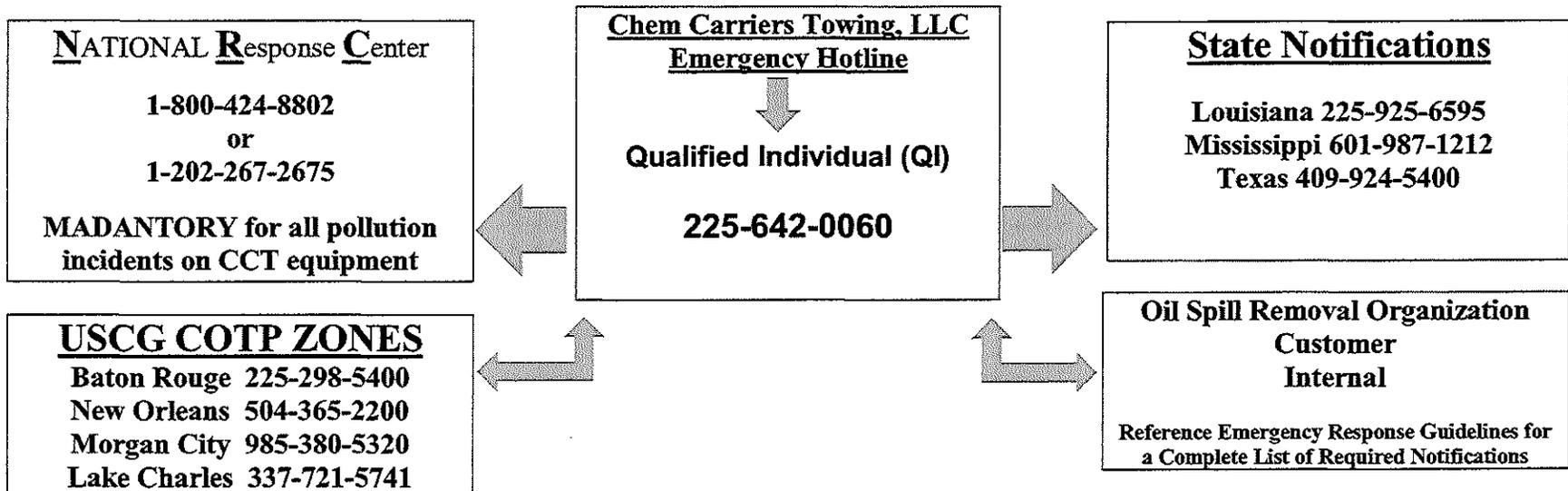
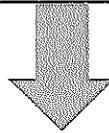
VESSEL INCIDENT / ACCIDENT NOTIFICATION CHART

Incidents that involve injury or illness, spill / pollution or a probable discharge, significant equipment failure, property damage, cargo related issues, service delays or any accident involving a Chem Carriers Towing, LLC vessel or crewmember shall be immediately called into the Chem Carriers Towing, LLC 24-hour Emergency Hotline at 225-642-0060



Master Standing the Watch

Once the situation has been stabilized and all safety issues have been addressed, immediately contact the Chem Carriers Towing, LLC Emergency Hotline (225-642-0060)
Any serious marine incident, or any incident that has the potential to become a serious marine incident, alcohol testing shall be conducted on all involved crewmembers within 2 hours, whether onboard the vessel or at a testing facility.



U.S. Department of
Homeland Security

United States
Coast Guard



Commanding Officer
United States Coast Guard
Marine Safety Center

US Coast Guard Stop 7430
2703 Martin Luther King Jr Ave SE
Washington, DC 20593-7430
Staff Symbol: MSC-3
Phone: (202) 795-6731
Email: msc@uscg.mil

16710/P022656/jdm1
Serial: C1-2103027
September 28, 2020

Marine Solutions, Inc.
Attn: Mr. Chetan Kumaria
P.O. Box 218197
Nashville, TN 37221
marinesolinc@aol.com

Subj: Hines Furlong and Chem Carrier Barges (Listed in Enclosure 1)
Multi-breasted Tandem Loading

Ref: (a) MSI Doc, Rev. 0, "Tandem Calculations for Hines Furlong Barges and Chem Carrier Barges," 60 pages, dated September 8, 2021
(b) Navigation and Vessel Inspection Circular (NVIC) 10-92, Change 2, "Coast Guard Recognition of Registered Professional Engineer Certification of Compliance with Coast Guard Requirements"
(c) Marine Safety Information bulletin 11-14, dated July 18, 2014

Dear Mr. Kumaria:

We reviewed reference (a), submitted by your email dated September 15, 2021 (MSC Document No. 2116097), under the provisions of reference (b), for compliance with 46 CFR Part 39.5000 for multi-breasted tandem loading. Reference (a) received full technical review by the Marine Safety Center for compliance with 46 CFR Subpart 39.5000. Reference (a) is **Examined in accordance with NVIC 10-92, CH-2**. Calculations such as these are not normally approved but are examined to verify compliance with appropriate regulations. The barges listed in enclosure (1) have previously approved vapor control systems. Based on the calculations in reference (a), multi-breasted tandem loading operations are authorized for the barges listed in enclosure (1). The following comments apply:

1. Multi-breasted tandem loading operations are limited to simultaneous collection of those cargoes listed in each vessel's CAA at the lower of the two maximum transfer rates noted in enclosure (1) for each barge pair.
2. Multi-breasted tandem loading approval is contingent on the vessels being owned or operated by the same entity, in accordance with 46 CFR 39.5001(a).
3. The facility pressure-vacuum valve must be set at the lower of the two settings noted in enclosure (1) for each barge pair.

Subj: Hines Furlong and Chem Carrier Barges
Multi-breasted Tandem Loading

16710/P022656/jdm1
Serial: C1-2103027
September 28, 2021

Please note that in accordance with reference (c), tandem loading shall be approved by the local Officer in Charge, Marine Inspection (OCMI) and may be subject to additional operational requirements.

For the OCMI's convenience, we have included the following recommended COI endorsement:

In accordance with 46 CFR Part 39.5000, this vessel's VCS has been evaluated and approved for multi-breasted tandem loading with other vessels specifically approved by Marine Safety Center letter Serial No. C1-2103027 dated September 28, 2021.

As an agreed-upon condition of your participation in the Marine Safety Center's electronic commerce program, you must provide the OCMI with a copy of this letter and identical paper copies of reference (a).

Our Project Number for this multi-breasted tandem fleet is P022656. Please ensure that all future correspondence includes the Project Number and the Official Numbers that are noted in enclosure (1).

Please contact LT Joel MacArthur at (202) 795-6779 with questions concerning our review.

Sincerely,

K. C. HEINE
Lieutenant Commander, U. S. Coast Guard
Chief, Vessel and Cargo Branch
By direction

Encl: (1) List of Applicable Barges

Copy: Commander, Coast Guard Sector Houston-Galveston, Prevention Department

List of Barges for C1-2103027

Barge Name	O.N.	Shipyard	Hull No.	MAWP (psi)	P/V Valve Press/Vac Setting	Loading/ Discharge Rates	Previous MSC Approval Letter	Approval Date
CCL 403	1231311	Trinity Ashland City	4772	6.5	6/3	5000/5000	C1-1100183	January 21, 2011
CCL 404	1231312	Trinity Ashland City	4773	6.5	6/3	5000/5000	C1-1100183	January 21, 2011
CCL 405	1236867	Trinity Madisonville	2196-1	3.5	3/3	5000/5000	C1-1103805	November 14, 2011
CCL 406	1236866	Trinity Madisonville	2199-1	3.5	3/3	5000/5000	C1-1103914	November 22, 2011
CCL 407	1246320	Three Rivers B&B	121512	3.5	3/2	5000/5000	C1-1203487	July 30, 2012
CCL 408	1246097	Tres Palacios Marine	144	3.5	3/2	6000/6000	C1-1301141	April 12, 2013
CCL 409	1246098	Tres Palacios Marine	145	3.5	3/2	6000/6000	C1-1301141	April 12, 2013
CCL 410	1255906	Tres Palacios Marine	152	3.5	3/2	6000/6000	C1-1303733	February 7, 2014
CCL 411	1255907	Tres Palacios Marine	153	3.5	3/2	6000/6000	C1-1303733	February 7, 2014
CCL 415-T	1262942	Trinity Ashland City	5154	3.5	3/2	5000/5000	C1-1503553	August 17, 2015
CCL 414-L	1262941	Trinity Ashland City	5153	3.5	3/2	5000/5000	C1-1503484	August 10, 2015
CCL 416-T	1264691	Tres Palacios Marine	160	3.5	3/2	6000/6000	C1-1504017	September 17, 2015
CCL 417 T	1298307	West Gulf Marine	285	6.5	6/0.5	4000/4576	C1-1901188	April 23, 2019
HFL 413	1237482	Arcosa Ashland City	4857	3.5	3/0.5	5000/5000	C1-1104850	December 21, 2011
HFL 415	1237483	Arcosa Ashland City	4858	3.5	3/0.5	5000/5000	C1-1104850	December 21, 2011
HFL 435	1236563	Arcosa Ashland City	4859	3	1.5/0.5	6000/6000	C1-1103918	November 9, 2011
HFL 605	1237484	Arcosa Ashland City	4853	3.5	3/0.5	5000/5000	C1-1104533	December 9, 2011

U.S. Department of
Homeland Security

United States
Coast Guard



Commanding Officer
United States Coast Guard
Marine Safety Center

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Arlington, VA 20598-7410
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Email: msc@uscg.mil

16710/P017982
Serial: C1-1303402
October 10, 2013

Dan Jones and Associates
Attn: Mr. Dan Jones
7519 Old Bridge Court
Sugar Land, TX 77479
Email: matdjones@aol.com

Subj: CCL 408, O.N. 1246097, Tres Palacios Hull No. 144
CCL 409, O.N. 1246098, Tres Palacios Hull No. 145
297' x 54' x 12' Unmanned Double Hull Type II/III Tank Barges (D/O)
Grade A (max. 25 psia Reid) and Lower Grades Flammable or Combustible Liquids
Identified in 46 CFR Table 30.25-1 or 46 CFR Part 153 Table 2
Design Density 8.7 lbs/gal, Maximum Density (slack Load) 13.5 lbs/gal
Rivers; Lakes, Bays, and Sounds; Limited Coastwise on unmanned fair weather voyages
only, not more than 12 miles offshore between St. Marks and Carrabelle, Florida
Multi-breasted Tandem Loading

Ref: (a) M. Dan Jones & Associates, Doc. No. 13-34, "Vapor Collection Calculations on the
Dual Loading of Tres Palacios Hulls: 144 & 145," 10 pages, dated September 11, 2013
(b) Marine Safety Center letter Serial: C1-1301141, dated April 10, 2013

Dear Mr. Jones:

In response to your email (MSC document No. 1316307) dated September 11, 2013, we have reviewed the pressure drop calculations for multi-breasted tandem loading. Reference (a) is "**Examined.**"

These barges have vapor control systems previously approved by reference (b), and are acceptable for dual loading operations. Based on the calculations in reference (a), tandem loading is limited to simultaneous collection of those cargoes listed in the vessels' CAA dated August 15, 2013 at a maximum transfer rate of **6,000 bbl/hr** per barge.

For final approval you must submit your request to Commandant (CG-ENG-5) with the name of the facility where the vessels will be conducting dual loading operations. For more information, please email the Coast Guard Hazardous Materials Standards division at HazmatStandards@uscg.mil.

(continued...)

16710/P017982
Serial: C1-1303402
October 10, 2013

Subj: CCL 408, O.N. 1246097, Tres Palacios Hull No. 144
CCL 409, O.N. 1246098, Tres Palacios Hull No. 145
Multi-breasted Tandem Loading

Our Project Number for the subject vessels is **P017982**. Please ensure that future correspondence includes the Project Number, and Official Numbers of each vessel that appears in the subject line. If you have any questions concerning our review, please contact Lieutenant Dixon Whitley at the number listed above.

Sincerely,

M. J. SEXTON
Lieutenant, U. S. Coast Guard
Assistant Chief, Tank Vessel and Offshore Division
By direction

Copy: Commander, Coast Guard Sector Corpus Christi (spi)
Commandant, U. S. Coast Guard (CG-ENG-5)

U.S. Department of
Homeland Security

United States
Coast Guard



Commanding Officer
United States Coast Guard
Marine Safety Center

2100 2nd Street, S.W. Stop 7102
Washington, DC 20593-7102
Staff Symbol: MSC-3
Phone: (202) 475-3403
Fax: (202) 475-3920
Email: msc@uscg.mil

16710/P017982
Serial: C1-1301141
April 10, 2013

Dan Jones and Associates
Attn: Mr. Dan Jones
7519 Old Bridge Court
Sugar Land, TX 77479
Email: matdjones@aol.com

Subj: CCL 408, CG1225383, Tres Palacios Hull # 144
CCL 409, CG1225384, Tres Palacios Hull # 145
297' x 54' x 12' Unmanned Double Hull Type II/III Tank Barges (D/O)
Grade A (max. 25 psia Reid) and Lower Grades Flammable or Combustible Liquids
Identified in 46 CFR Table 30.25-1 or 46 CFR Part 153 Table 2
Design Density 8.7 lbs/gal, Maximum Density (slack Load) 13.5 lbs/gal
Rivers; Lakes, Bays, and Sounds; Limited Coastwise on unmanned fair weather voyages
only, not more than 12 miles offshore between St. Marks and Carrabelle, Florida
Vapor Collection System and List of Authorized Cargoes

Ref: (a) West Gulf Marine Inc. DWG No. TPM144-VP1, "Vapor Recovery Piping System"
Rev. 1, Sheet 1 of 2 dated February 13, 2013
(b) West Gulf Marine Inc. DWG No. TPM144-VP1, "Vapor Recovery Piping System"
Rev. 1, Sheet 2 of 2 dated February 13, 2013
(c) M. Dan Jones & Associates Document "Vapor Control Calculations on Tres Palacios
Marine Hulls 144 and 145" Rev. 1, 17 pages, dated January 18, 2013
(d) Coast Guard Marine Safety Center's "Industry Guidelines for Determining the
Maximum Liquid Transfer Rate for a Tank Vessel Transferring a Flammable or
Combustible Cargo Using a Vapor Control System" dated July 15, 2001

Dear Mr. Jones:

We have reviewed references (a) through (c), the vapor collection system (VCS) piping plan and the vapor control pressure drop calculations for compliance with 46 CFR Part 39, excluding Subpart 39.40, submitted in your emails (MSC Document No's 1311714 and 1311419) dated March 14, 2013. Accordingly, the VCS piping plan, references (a) and (b), are "**Approved.**" The installation, workmanship and testing shall be to the satisfaction of the cognizant Officer in Charge, Marine Inspection (OCMI). The pressure drop calculations in reference (c) are "**Examined.**" Calculations and plans such as these are not normally marked approved, but are used to verify that the system meets the applicable regulations. The following comments apply; those that require action must be addressed to the satisfaction of the OCMI:

Subj: CCL 408, CG1225383, Tres Palacios Hull # 144
CCL 409, CG1225384, Tres Palacios Hull # 145
Vapor Collection System and List of Authorized Cargoes

1. Based on your calculations, this VCS is capable of recovering vapors of the cargoes listed in enclosure (1) at a maximum vapor-air mixture density of **0.379 lbm/ft³**, at a maximum liquid transfer rate of **6,000 bbl/hr**.
2. In accordance with reference (b), the set-point of the overflow shutdown system shall be no higher than **6 inches** below the tank top at centerline of each cargo tank.
3. Reference (a) includes a vent stack. Reference (a) does not indicate the vent riser/mast will be fitted with a flame screen. The vent riser shall be fitted with a flame screen meeting the requirements of 46 CFR 30.10-25.
4. The tanks share a common vent header, which would allow mixing of various vapors and liquid cargoes. Note this configuration restricts the types of cargoes that can be carried simultaneously.
5. The vapor collection piping must be electrically continuous and bonded to the hull as required by 46 CFR 39.20-1(a)(5).
6. The vapor collection system must be provided with an acceptable isolation valve located at the vessel's vapor connection that shows whether the valve is open or closed as required by 46 CFR 39.39.20-1(c) and 56.20-9.
7. The vessel's vapor connection flange must meet the requirements of 46 CFR 39.20-1(e).
8. Enclosure (1) contains VCS Categories 2 and 4. Polymerization and residue build-up of these cargoes can adversely affect the operation of the vapor collection system. The barge's owner must develop a method for internal visual inspection to verify that fouling of VCS components is not occurring.
9. Vapor collection hoses carried aboard the vessel, if any, must be designed and marked in accordance with the requirements of 46 CFR 39.20-1(f). Equipment used for handling vapor collection hoses must be designed to preclude kinking or collapse of the hose as required in 46 CFR 39.20-1(g); hose saddles may be acceptable for complying with this requirement.
10. At the time of this review, the vessels' names and official numbers were not available. Once you provide vessel names and official numbers to this office, the Cargo Authority Attachment (CAA) for each vessel will be generated based on the Coast Guard numbers and will be made available in the Coast Guard's Marine Information for Safety and Law Enforcement database (MISLE). The CAA will contain the cargoes found in enclosures (1) and (2). Enclosure (2) was generated based on reference (d). Please note that only the cognizant OCMI can issue a vessel's CAA, which is valid only when referenced by and attached to a valid Certificate of Inspection (COI). The OCMI will verify the carriage authority and vapor control

16710/P017982
Serial: C1-1301141
April 10, 2013

Subj: CCL 408, CG1225383, Tres Palacios Hull # 144
CCL 409, CG1225384, Tres Palacios Hull # 145
Vapor Collection System and List of Authorized Cargoes

tank group characteristics we used to create enclosures (1) and (2) are consistent with the vessel's actual construction. Enclosure (3) contains the VCS tank group characteristics and our recommended COI endorsement.

As a condition of your participation in MSC's electronic commerce program, you must provide a copy of the approved drawings to the OCMI, along with a copy of the corresponding MSC approval letter.

Our Project Number for this vessel is **P017982**. Please ensure that future correspondence includes the Project Number and either the Coast Guard (CG) number that appears in the subject line or the Official Number of each barge once assigned. To avoid confusion, the vessel owners are encouraged to provide the CG number to the National Vessel Documentation Center when applying for documentation.

If you have any questions concerning our review, please contact Lieutenant Dixon Whitley at the number listed above.

Sincerely,

J. B. WHEELER
Lieutenant, U. S. Coast Guard
Assistant Chief, Tank Vessel and Offshore Division
By direction

Encl: (1) Vapor Collection System List of Cargoes; CCL 408, CG1225383 and CG1225384, Tres Palacios Hulls # 144 and 145; dated April 10, 2013
(2) 46 CFR Part 151 Cargo List CCL 408 and CCL 409, CG1225383 and CG1225384, Tres Palacios Hulls # 144 and 145; dated April 10, 2013
(3) VCS PRIS; CCL 408, CG1225383 and CG1225384, Tres Palacios Hulls # 144 and 145; dated April 10, 2013

Copy: Commander, Coast Guard Sector Corpus Christi



BARGE "CCL 409"

INNAGE TRIM TABLE

	1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.	
	<u>BOW</u>	<u>STERN</u>										
1 PORT	00-1/4	- 00-1/4	00-1/2	- 00-1/2	00-3/4	- 00-3/4	01-0/8	- 01-0/8	01-1/4	- 01-1/4	01-1/2	- 01-1/2
1 STBD	00-1/4	- 00-1/4	00-1/2	- 00-1/2	00-3/4	- 00-3/4	01-0/8	- 01-0/8	01-1/4	- 01-1/4	01-1/2	- 01-1/2
2 PORT	- 00-1/8	00-1/8	- 00-3/8	00-3/8	- 00-1/2	00-1/2	- 00-5/8	00-5/8	- 00-7/8	00-7/8	- 01-0/8	01-0/8
2 STBD	- 00-1/8	00-1/8	- 00-3/8	00-3/8	- 00-1/2	00-1/2	- 00-5/8	00-5/8	- 00-7/8	00-7/8	- 01-0/8	01-0/8
3 PORT	00-3/4	- 00-3/4	01-1/2	- 01-1/2	02-1/4	- 02-1/4	03-0/8	- 03-0/8	03-7/8	- 03-7/8	04-5/8	- 04-5/8
3 STBD	00-3/4	- 00-3/4	01-1/2	- 01-1/2	02-1/4	- 02-1/4	03-0/8	- 03-0/8	03-7/8	- 03-7/8	04-5/8	- 04-5/8

(ALL MEASUREMENTS ABOVE ARE IN INCHES)

EXAMPLE FOR ABOVE TRIM CORRECTIONS:

FWD. DRAFT = 2'-00"
 AFT DRAFT = 4'-00"
 DIFF. = 2'-00" (DOWN BY STERN)

THE CORRECTION FOR 2'-00" TRIM DOWN BY STERN FOR 1 PORT IS - 00-1/2"
 FOR A MEASURED INNAGE GAUGE OF 4'-00" ON 1 PORT, THE TRIM CORRECTED INNAGE IS 3'-11 1/2"

LENGTH BETWEEN DRAFT MARKS: 231'-06"

July 24, 2013

PRECISION MEASUREMENT
 & ANALYSIS, INC.
 P.O. Box 2092
 Pearland, Texas 77588

<http://www.pmacorp.net>



BARGE "CCL 409"

INNAGE TRIM TABLE

	7 FT.		8 FT.		9 FT.		10 FT.		11 FT.		12 FT.	
	<u>BOW</u>	<u>STERN</u>										
1 PORT	- 01-3/4	01-3/4	- 02-0/8	02-0/8	- 02-1/4	02-1/4	- 02-1/2	02-1/2	- 02-3/4	02-3/4	- 03-0/8	03-0/8
1 STBD	- 01-3/4	01-3/4	- 02-0/8	02-0/8	- 02-1/4	02-1/4	- 02-1/2	02-1/2	- 02-3/4	02-3/4	- 03-0/8	03-0/8
2 PORT	01-1/8	- 01-1/8	01-3/8	- 01-3/8	01-1/2	- 01-1/2	01-5/8	- 01-5/8	01-7/8	- 01-7/8	02-0/8	- 02-0/8
2 STBD	01-1/8	- 01-1/8	01-3/8	- 01-3/8	01-1/2	- 01-1/2	01-5/8	- 01-5/8	01-7/8	- 01-7/8	02-0/8	- 02-0/8
3 PORT	- 05-3/8	05-3/8	- 06-1/8	06-1/8	- 06-7/8	06-7/8	- 07-5/8	07-5/8	- 08-3/8	08-3/8	- 09-1/8	09-1/8
3 STBD	- 05-3/8	05-3/8	- 06-1/8	06-1/8	- 06-7/8	06-7/8	- 07-5/8	07-5/8	- 08-3/8	08-3/8	- 09-1/8	09-1/8

(ALL MEASUREMENTS ABOVE ARE IN INCHES)

EXAMPLE FOR ABOVE TRIM CORRECTIONS:

FWD. DRAFT = 2'-00"
 AFT DRAFT = 4'-00"
 DIFF. = 2'-00" (DOWN BY STERN)

THE CORRECTION FOR 2'-00" TRIM DOWN BY STERN FOR 1 PORT IS 00-1/2"
 FOR A MEASURED INNAGE GAUGE OF 4'-00" ON 1 PORT, THE TRIM CORRECTED INNAGE IS 4'-00 1/2"

LENGTH BETWEEN DRAFT MARKS: 231'-06"

September 9, 2014

**PRECISION MEASUREMENT
& ANALYSIS, INC.**

P.O. Box 2092
 Pearland, Texas 77588

<http://www.pmacorp.net>



BARGE "CCL 409"

1 STBD INNAGE TABLE

GAUGE HEIGHT 14'-10 1/2"

CAPACITIES GIVEN IN WHOLE GALLONS

0 FT.		1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.		7 FT.		8 FT.		9 FT.	
IN	OUT	IN	OUT	IN	OUT														
0	112	0	10,745	0	22,587	0	35,252	0	48,758	0	62,888	0	76,518	0	90,549	0	104,479	0	118,409
1/4	250	1/4	10,984	1/4	22,843	1/4	35,525	1/4	49,048	1/4	62,978	1/4	76,909	1/4	90,839	1/4	104,769	1/4	118,699
1/2	388	1/2	11,223	1/2	23,099	1/2	35,798	1/2	49,338	1/2	63,268	1/2	77,199	1/2	91,129	1/2	105,060	1/2	118,989
3/4	527	3/4	11,461	3/4	23,355	3/4	36,071	3/4	49,628	3/4	63,559	3/4	77,489	3/4	91,419	3/4	105,350	3/4	119,280
1	665	1	11,700	1	23,611	1	36,344	1	49,919	1	63,849	1	77,779	1	91,710	1	105,640	1	119,570
1 1/4	878	1 1/4	11,940	1 1/4	23,869	1 1/4	36,618	1 1/4	50,209	1 1/4	64,139	1 1/4	78,069	1 1/4	92,000	1 1/4	105,930	1 1/4	119,860
1 1/2	1,090	1 1/2	12,180	1 1/2	24,127	1 1/2	36,892	1 1/2	50,499	1 1/2	64,429	1 1/2	78,360	1 1/2	92,290	1 1/2	106,220	1 1/2	120,150
1 3/4	1,302	1 3/4	12,421	1 3/4	24,384	1 3/4	37,167	1 3/4	50,789	1 3/4	64,720	1 3/4	78,650	1 3/4	92,580	1 3/4	106,511	1 3/4	120,440
2	1,515	2	12,661	2	24,642	2	37,441	2	51,079	2	65,010	2	78,940	2	92,870	2	106,801	2	120,730
2 1/4	1,739	2 1/4	12,902	2 1/4	24,901	2 1/4	37,717	2 1/4	51,370	2 1/4	65,300	2 1/4	79,230	2 1/4	93,161	2 1/4	107,091	2 1/4	121,021
2 1/2	1,963	2 1/2	13,144	2 1/2	25,160	2 1/2	37,993	2 1/2	51,660	2 1/2	65,580	2 1/2	79,521	2 1/2	93,451	2 1/2	107,381	2 1/2	121,311
2 3/4	2,188	2 3/4	13,386	2 3/4	25,419	2 3/4	38,269	2 3/4	51,950	2 3/4	65,860	2 3/4	79,811	2 3/4	93,741	2 3/4	107,671	2 3/4	121,601
3	2,412	3	13,627	3	25,678	3	38,545	3	52,240	3	66,171	3	80,101	3	94,031	3	107,962	3	121,891
3 1/4	2,637	3 1/4	13,870	3 1/4	25,938	3 1/4	38,823	3 1/4	52,530	3 1/4	66,461	3 1/4	80,391	3 1/4	94,322	3 1/4	108,252	3 1/4	122,181
3 1/2	2,863	3 1/2	14,113	3 1/2	26,199	3 1/2	39,101	3 1/2	52,821	3 1/2	66,751	3 1/2	80,681	3 1/2	94,612	3 1/2	108,542	3 1/2	122,472
3 3/4	3,089	3 3/4	14,358	3 3/4	26,459	3 3/4	39,378	3 3/4	53,111	3 3/4	67,041	3 3/4	80,972	3 3/4	94,902	3 3/4	108,832	3 3/4	122,762
4	3,314	4	14,600	4	26,720	4	39,656	4	53,401	4	67,331	4	81,262	4	95,192	4	109,123	4	123,052
4 1/4	3,542	4 1/4	14,844	4 1/4	26,982	4 1/4	39,936	4 1/4	53,691	4 1/4	67,622	4 1/4	81,552	4 1/4	95,482	4 1/4	109,413	4 1/4	123,342
4 1/2	3,769	4 1/2	15,089	4 1/2	27,244	4 1/2	40,215	4 1/2	53,982	4 1/2	67,912	4 1/2	81,842	4 1/2	95,773	4 1/2	109,703	4 1/2	123,632
4 3/4	3,996	4 3/4	15,333	4 3/4	27,506	4 3/4	40,494	4 3/4	54,272	4 3/4	68,202	4 3/4	82,132	4 3/4	96,063	4 3/4	109,993	4 3/4	123,922
5	4,223	5	15,578	5	27,768	5	40,774	5	54,562	5	68,492	5	82,423	5	96,353	5	110,283	5	124,213
5 1/4	4,452	5 1/4	15,824	5 1/4	28,031	5 1/4	41,054	5 1/4	54,852	5 1/4	68,783	5 1/4	82,713	5 1/4	96,643	5 1/4	110,574	5 1/4	124,503
5 1/2	4,680	5 1/2	16,070	5 1/2	28,294	5 1/2	41,336	5 1/2	55,142	5 1/2	69,073	5 1/2	83,003	5 1/2	96,933	5 1/2	110,864	5 1/2	124,793
5 3/4	4,909	5 3/4	16,316	5 3/4	28,558	5 3/4	41,616	5 3/4	55,433	5 3/4	69,363	5 3/4	83,293	5 3/4	97,224	5 3/4	111,154	5 3/4	125,083
6	5,137	6	16,562	6	28,821	6	41,897	6	55,723	6	69,653	6	83,584	6	97,514	6	111,444	6	125,373
6 1/4	5,367	6 1/4	16,809	6 1/4	29,086	6 1/4	42,179	6 1/4	56,013	6 1/4	69,943	6 1/4	83,874	6 1/4	97,804	6 1/4	111,734	6 1/4	125,663
6 1/2	5,597	6 1/2	17,058	6 1/2	29,351	6 1/2	42,461	6 1/2	56,303	6 1/2	70,234	6 1/2	84,164	6 1/2	98,094	6 1/2	112,025	6 1/2	125,954
6 3/4	5,827	6 3/4	17,304	6 3/4	29,616	6 3/4	42,744	6 3/4	56,593	6 3/4	70,524	6 3/4	84,454	6 3/4	98,385	6 3/4	112,315	6 3/4	126,244
7	6,057	7	17,551	7	29,880	7	43,026	7	56,884	7	70,814	7	84,744	7	98,675	7	112,605	7	126,534
7 1/4	6,289	7 1/4	17,800	7 1/4	30,146	7 1/4	43,310	7 1/4	57,174	7 1/4	71,104	7 1/4	85,036	7 1/4	98,965	7 1/4	112,896	7 1/4	126,824
7 1/2	6,520	7 1/2	18,049	7 1/2	30,412	7 1/2	43,593	7 1/2	57,464	7 1/2	71,394	7 1/2	85,325	7 1/2	99,255	7 1/2	113,186	7 1/2	127,114
7 3/4	6,752	7 3/4	18,298	7 3/4	30,678	7 3/4	43,877	7 3/4	57,754	7 3/4	71,685	7 3/4	85,615	7 3/4	99,545	7 3/4	113,476	7 3/4	127,404
8	6,983	8	18,547	8	30,943	8	44,161	8	58,045	8	71,975	8	85,905	8	99,836	8	113,766	8	127,695
8 1/4	7,216	8 1/4	18,797	8 1/4	31,211	8 1/4	44,446	8 1/4	58,335	8 1/4	72,265	8 1/4	86,195	8 1/4	100,126	8 1/4	114,056	8 1/4	127,985
8 1/2	7,449	8 1/2	19,048	8 1/2	31,478	8 1/2	44,731	8 1/2	58,625	8 1/2	72,555	8 1/2	86,488	8 1/2	100,416	8 1/2	114,346	8 1/2	128,275
8 3/4	7,682	8 3/4	19,298	8 3/4	31,745	8 3/4	45,016	8 3/4	58,915	8 3/4	72,846	8 3/4	86,776	8 3/4	100,706	8 3/4	114,637	8 3/4	128,566
9	7,915	9	19,548	9	32,012	9	45,301	9	59,205	9	73,136	9	87,068	9	100,996	9	114,927	9	128,856
9 1/4	8,149	9 1/4	19,800	9 1/4	32,281	9 1/4	45,588	9 1/4	59,496	9 1/4	73,426	9 1/4	87,356	9 1/4	101,287	9 1/4	115,217	9 1/4	129,146
9 1/2	8,384	9 1/2	20,052	9 1/2	32,549	9 1/2	45,874	9 1/2	59,786	9 1/2	73,716	9 1/2	87,647	9 1/2	101,577	9 1/2	115,507	9 1/2	129,436
9 3/4	8,618	9 3/4	20,304	9 3/4	32,818	9 3/4	46,161	9 3/4	60,076	9 3/4	74,006	9 3/4	87,937	9 3/4	101,867	9 3/4	115,797	9 3/4	129,726
10	8,853	10	20,555	10	33,087	10	46,448	10	60,366	10	74,297	10	88,227	10	102,157	10	116,088	10	130,016
10 1/4	9,088	10 1/4	20,809	10 1/4	33,357	10 1/4	46,736	10 1/4	60,656	10 1/4	74,587	10 1/4	88,517	10 1/4	102,448	10 1/4	116,378	10 1/4	130,306
10 1/2	9,324	10 1/2	21,062	10 1/2	33,626	10 1/2	47,024	10 1/2	60,947	10 1/2	74,877	10 1/2	88,807	10 1/2	102,738	10 1/2	116,668	10 1/2	130,596
10 3/4	9,560	10 3/4	21,315	10 3/4	33,896	10 3/4	47,312	10 3/4	61,237	10 3/4	75,167	10 3/4	89,098	10 3/4	103,028	10 3/4	116,958	10 3/4	130,886
11	9,796	11	21,568	11	34,185	11	47,600	11	61,527	11	75,458	11	89,388	11	103,318	11	117,248	11	131,177
11 1/4	10,033	11 1/4	21,823	11 1/4	34,438	11 1/4	47,889	11 1/4	61,817	11 1/4	75,748	11 1/4	89,678	11 1/4	103,608	11 1/4	117,539	11 1/4	131,467
11 1/2	10,271	11 1/2	22,078	11 1/2	34,709	11 1/2	48,179	11 1/2	62,108	11 1/2	76,038	11 1/2	89,968	11 1/2	103,899	11 1/2	117,829	11 1/2	131,757
11 3/4	10,508	11 3/4	22,332	11 3/4	34,980	11 3/4	48,468	11 3/4	62,398	11 3/4	76,328	11 3/4	90,259	11 3/4	104,189	11 3/4	118,119	11 3/4	132,047

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.
 CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.
 CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.
 CAPACITY TABLE ONLY APPLIES TO INNAGE GAUGES TAKEN TO TOP OF 2" DIAMETER PIPE.
 GAUGE POINT: (2" PIPE) LOCATED 42'-06" OFF CENTERLINE AND 14'-06" FORWARD OF AFT BULKHEAD.

PRECISION MEASUREMENT
 & ANALYSIS, INC.
 P.O. Box 2032
 Pearland, Texas 77588
<http://www.pmaCorp.net>



BARGE "CCL 409"

1 STBD INNAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-10 1/2"

IN	10 FT.	IN	11 FT.	IN	12 FT.	IN	13 FT.	IN	14 FT.	IN	15 FT.	IN	16 FT.	IN	17 FT.	IN	18 FT.	IN	19 FT.
0	132,337	0	146,266	0	160,194	0	174,089	0	0	0	0	0	0	0	0	0	0	0	0
1/4	132,628	1/4	146,556	1/4	160,484	1/4	174,376	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	132,918	1/2	146,846	1/2	160,774	1/2	174,666	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	133,208	3/4	147,136	3/4	161,066	3/4	174,955	3/4		3/4		3/4		3/4		3/4		3/4	
1	133,498	1	147,426	1	161,355	1	175,243	1		1		1		1		1		1	
1 1/4	133,788	1 1/4	147,717	1 1/4	161,645	1 1/4	175,532	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	134,078	1 1/2	148,007	1 1/2	161,935	1 1/2	175,820	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	134,369	3/4	148,297	3/4	162,225	3/4	176,109	3/4		3/4		3/4		3/4		3/4		3/4	
2	134,659	2	148,587	2	162,516	2	176,397	2		2		2		2		2		2	
2 1/4	134,949	2 1/4	148,877	2 1/4	162,806	2 1/4	176,686	2 1/4		2 1/4		2 1/4		2 1/4		2 1/4		2 1/4	
1/2	135,239	1/2	149,168	1/2	163,098	1/2	176,974	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	135,529	3/4	149,458	3/4	163,388	3/4	177,263	3/4		3/4		3/4		3/4		3/4		3/4	
3	135,820	3	149,748	3	163,678	3	177,551	3		3		3		3		3		3	
3 1/4	136,110	3 1/4	150,038	3 1/4	163,966	3 1/4	177,840	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
1/2	136,400	1/2	150,328	1/2	164,267	1/2	178,128	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	136,690	3/4	150,618	3/4	164,547	3/4	178,417	3/4		3/4		3/4		3/4		3/4		3/4	
4	136,980	4	150,909	4	164,837	4	178,705	4		4		4		4		4		4	
4 1/4	137,270	4 1/4	151,199	4 1/4	165,127	4 1/4	178,994	4 1/4		4 1/4		4 1/4		4 1/4		4 1/4		4 1/4	
1/2	137,561	1/2	151,489	1/2	165,417	1/2	179,282	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	137,851	3/4	151,779	3/4	165,707	3/4	179,571	3/4		3/4		3/4		3/4		3/4		3/4	
5	138,141	5	152,069	5	165,998	5	179,859	5		5		5		5		5		5	
5 1/4	138,431	5 1/4	152,359	5 1/4	166,288	5 1/4	180,148	5 1/4		5 1/4		5 1/4		5 1/4		5 1/4		5 1/4	
1/2	138,721	1/2	152,650	1/2	166,578	1/2	180,436	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	139,011	3/4	152,940	3/4	166,868	3/4	180,725	3/4		3/4		3/4		3/4		3/4		3/4	
6	139,302	6	153,230	6	167,158	6	181,013	6		6		6		6		6		6	
6 1/4	139,592	6 1/4	153,520	6 1/4	167,448	6 1/4	181,302	6 1/4		6 1/4		6 1/4		6 1/4		6 1/4		6 1/4	
1/2	139,882	1/2	153,810	1/2	167,739	1/2	181,590	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	140,172	3/4	154,100	3/4	168,029	3/4	181,879	3/4		3/4		3/4		3/4		3/4		3/4	
7	140,462	7	154,391	7	168,319	7	182,167	7		7		7		7		7		7	
7 1/4	140,752	7 1/4	154,681	7 1/4	168,608	7 1/4	182,452	7 1/4		7 1/4		7 1/4		7 1/4		7 1/4		7 1/4	
1/2	141,043	1/2	154,971	1/2	168,896	1/2	182,738	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	141,333	3/4	155,261	3/4	169,185	3/4	183,023	3/4		3/4		3/4		3/4		3/4		3/4	
8	141,623	8	155,551	8	169,473	8	183,309	8		8		8		8		8		8	
8 1/4	141,913	8 1/4	155,842	8 1/4	169,762	8 1/4	183,593	8 1/4		8 1/4		8 1/4		8 1/4		8 1/4		8 1/4	
1/2	142,203	1/2	156,132	1/2	170,050	1/2	183,850	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	142,494	3/4	156,422	3/4	170,339	3/4	184,121	3/4		3/4		3/4		3/4		3/4		3/4	
9	142,784	9	156,712	9	170,627	9	184,391	9		9		9		9		9		9	
9 1/4	143,074	9 1/4	157,002	9 1/4	170,916	9 1/4	184,611	9 1/4		9 1/4		9 1/4		9 1/4		9 1/4		9 1/4	
1/2	143,364	1/2	157,292	1/2	171,204	1/2	184,830	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	143,654	3/4	157,583	3/4	171,493	3/4	185,050	3/4		3/4		3/4		3/4		3/4		3/4	
10	143,944	10	157,873	10	171,781	10		10		10		10		10		10		10	
10 1/4	144,235	10 1/4	158,163	10 1/4	172,070	10 1/4		10 1/4		10 1/4		10 1/4		10 1/4		10 1/4		10 1/4	
1/2	144,525	1/2	158,453	1/2	172,358	1/2		1/2		1/2		1/2		1/2		1/2		1/2	
3/4	144,815	3/4	158,743	3/4	172,647	3/4		3/4		3/4		3/4		3/4		3/4		3/4	
11	145,105	11	159,033	11	172,935	11		11		11		11		11		11		11	
11 1/4	145,395	11 1/4	159,324	11 1/4	173,224	11 1/4		11 1/4		11 1/4		11 1/4		11 1/4		11 1/4		11 1/4	
1/2	145,685	1/2	159,614	1/2	173,512	1/2		1/2		1/2		1/2		1/2		1/2		1/2	
3/4	145,976	3/4	159,904	3/4	173,801	3/4		3/4		3/4		3/4		3/4		3/4		3/4	

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/26/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

PRECISION MEASUREMENT
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BARGE "CCL 409"

1 PORT INNAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-10 3/4"

IN	0 FT.	IN	1 FT.	IN	2 FT.	IN	3 FT.	IN	4 FT.	IN	5 FT.	IN	6 FT.	IN	7 FT.	IN	8 FT.	IN	9 FT.
0	111	0	10,740	0	22,678	0	35,205	0	48,584	0	62,611	0	76,538	0	90,465	0	104,391	0	118,318
1/4	250	1/4	10,979	1/4	22,834	1/4	35,477	1/4	48,974	1/4	63,001	1/4	76,828	1/4	90,755	1/4	104,681	1/4	118,608
1/2	388	1/2	11,218	1/2	23,080	1/2	36,748	1/2	49,266	1/2	63,191	1/2	77,118	1/2	91,045	1/2	104,972	1/2	118,838
3/4	526	3/4	11,456	3/4	23,346	3/4	36,920	3/4	49,555	3/4	63,481	3/4	77,408	3/4	91,335	3/4	105,262	3/4	119,188
1	665	1	11,695	1	23,602	1	36,292	1	49,845	1	63,772	1	77,698	1	91,625	1	105,552	1	119,478
1 1/4	877	1 1/4	11,935	1 1/4	23,860	1 1/4	36,565	1 1/4	50,135	1 1/4	64,062	1 1/4	77,988	1 1/4	91,915	1 1/4	105,842	1 1/4	119,768
1 1/2	1,089	1 1/2	12,175	1 1/2	24,117	1 1/2	36,838	1 1/2	50,425	1 1/2	64,352	1 1/2	78,279	1 1/2	92,205	1 1/2	106,132	1 1/2	120,058
3/4	1,302	3/4	12,415	3/4	24,376	3/4	37,111	3/4	50,715	3/4	64,642	3/4	78,569	3/4	92,495	3/4	106,422	3/4	120,348
2	1,514	2	12,655	2	24,632	2	37,384	2	51,005	2	64,932	2	78,859	2	92,786	2	106,712	2	120,638
1 1/4	1,738	1 1/4	12,897	1 1/4	24,891	1 1/4	37,659	1 1/4	51,296	1 1/4	65,222	1 1/4	79,149	1 1/4	93,076	1 1/4	107,003	1 1/4	120,929
1 1/2	1,962	1 1/2	13,138	1 1/2	25,150	1 1/2	37,933	1 1/2	51,588	1 1/2	65,512	1 1/2	79,439	1 1/2	93,368	1 1/2	107,293	1 1/2	121,219
3/4	2,186	3/4	13,380	3/4	25,409	3/4	38,208	3/4	51,876	3/4	65,803	3/4	79,729	3/4	93,656	3/4	107,583	3/4	121,509
3	2,410	3	13,622	3	25,668	3	38,483	3	52,166	3	66,093	3	80,019	3	93,946	3	107,873	3	121,799
1 1/4	2,636	1 1/4	13,865	1 1/4	25,929	1 1/4	38,759	1 1/4	52,466	1 1/4	66,383	1 1/4	80,310	1 1/4	94,236	1 1/4	108,163	1 1/4	122,089
1 1/2	2,862	1 1/2	14,108	1 1/2	26,189	1 1/2	39,038	1 1/2	52,746	1 1/2	66,673	1 1/2	80,600	1 1/2	94,526	1 1/2	108,453	1 1/2	122,379
3/4	3,087	3/4	14,351	3/4	26,448	3/4	39,313	3/4	53,036	3/4	66,963	3/4	80,890	3/4	94,817	3/4	108,743	3/4	122,669
4	3,313	4	14,594	4	26,710	4	39,580	4	53,327	4	67,253	4	81,180	4	95,107	4	109,033	4	122,959
1 1/4	3,540	1 1/4	14,838	1 1/4	26,972	1 1/4	39,868	1 1/4	53,617	1 1/4	67,543	1 1/4	81,470	1 1/4	95,397	1 1/4	109,324	1 1/4	123,249
1 1/2	3,767	1 1/2	15,082	1 1/2	27,233	1 1/2	40,146	1 1/2	53,907	1 1/2	67,834	1 1/2	81,760	1 1/2	95,687	1 1/2	109,614	1 1/2	123,540
3/4	3,994	3/4	15,327	3/4	27,495	3/4	40,424	3/4	54,197	3/4	68,124	3/4	82,050	3/4	95,977	3/4	109,904	3/4	123,830
5	4,221	5	15,571	5	27,757	5	40,703	5	54,487	5	68,414	5	82,341	5	96,267	5	110,194	5	124,120
1 1/4	4,449	1 1/4	15,817	1 1/4	28,019	1 1/4	40,983	1 1/4	54,777	1 1/4	68,704	1 1/4	82,631	1 1/4	96,557	1 1/4	110,484	1 1/4	124,410
1 1/2	4,678	1 1/2	16,063	1 1/2	28,281	1 1/2	41,264	1 1/2	55,067	1 1/2	68,994	1 1/2	82,921	1 1/2	96,848	1 1/2	110,774	1 1/2	124,700
3/4	4,906	3/4	16,309	3/4	28,543	3/4	41,545	3/4	55,358	3/4	69,284	3/4	83,211	3/4	97,138	3/4	111,064	3/4	124,990
6	5,136	6	16,556	6	28,805	6	41,825	6	55,648	6	69,574	6	83,501	6	97,428	6	111,355	6	125,280
1 1/4	5,365	1 1/4	16,802	1 1/4	29,089	1 1/4	42,108	1 1/4	55,938	1 1/4	69,865	1 1/4	83,791	1 1/4	97,718	1 1/4	111,645	1 1/4	125,570
1 1/2	5,595	1 1/2	17,050	1 1/2	29,333	1 1/2	42,390	1 1/2	56,228	1 1/2	70,155	1 1/2	84,081	1 1/2	98,008	1 1/2	111,935	1 1/2	125,860
3/4	5,825	3/4	17,297	3/4	29,596	3/4	42,672	3/4	56,518	3/4	70,445	3/4	84,372	3/4	98,298	3/4	112,225	3/4	126,150
7	6,055	7	17,544	7	29,860	7	42,954	7	56,808	7	70,735	7	84,662	7	98,588	7	112,515	7	126,441
1 1/4	6,286	1 1/4	17,793	1 1/4	30,124	1 1/4	43,238	1 1/4	57,098	1 1/4	71,026	1 1/4	84,952	1 1/4	98,879	1 1/4	112,805	1 1/4	126,731
1 1/2	6,517	1 1/2	18,042	1 1/2	30,388	1 1/2	43,521	1 1/2	57,389	1 1/2	71,316	1 1/2	85,242	1 1/2	99,169	1 1/2	113,095	1 1/2	127,021
3/4	6,749	3/4	18,291	3/4	30,653	3/4	43,805	3/4	57,679	3/4	71,605	3/4	85,532	3/4	99,459	3/4	113,386	3/4	127,311
8	6,980	8	18,539	8	30,917	8	44,088	8	57,969	8	71,896	8	85,822	8	99,749	8	113,676	8	127,601
1 1/4	7,213	1 1/4	18,790	1 1/4	31,183	1 1/4	44,374	1 1/4	58,259	1 1/4	72,186	1 1/4	86,112	1 1/4	100,039	1 1/4	113,966	1 1/4	127,891
1 1/2	7,446	1 1/2	19,040	1 1/2	31,449	1 1/2	44,659	1 1/2	58,549	1 1/2	72,478	1 1/2	86,403	1 1/2	100,329	1 1/2	114,258	1 1/2	128,181
3/4	7,679	3/4	19,290	3/4	31,715	3/4	44,944	3/4	58,839	3/4	72,766	3/4	86,693	3/4	100,619	3/4	114,546	3/4	128,471
9	7,912	9	19,540	9	31,981	9	45,229	9	59,129	9	73,056	9	86,983	9	100,910	9	114,838	9	128,761
1 1/4	8,148	1 1/4	19,792	1 1/4	32,248	1 1/4	45,515	1 1/4	59,420	1 1/4	73,346	1 1/4	87,273	1 1/4	101,200	1 1/4	115,126	1 1/4	129,061
1 1/2	8,380	1 1/2	20,044	1 1/2	32,516	1 1/2	45,802	1 1/2	59,710	1 1/2	73,636	1 1/2	87,563	1 1/2	101,490	1 1/2	115,417	1 1/2	129,342
3/4	8,614	3/4	20,295	3/4	32,783	3/4	46,088	3/4	60,000	3/4	73,927	3/4	87,853	3/4	101,780	3/4	115,707	3/4	129,632
10	8,849	10	20,547	10	33,050	10	46,375	10	60,290	10	74,217	10	88,143	10	102,070	10	116,997	10	129,922
1 1/4	9,084	1 1/4	20,800	1 1/4	33,319	1 1/4	46,663	1 1/4	60,580	1 1/4	74,507	1 1/4	88,434	1 1/4	102,360	1 1/4	116,287	1 1/4	130,212
1 1/2	9,320	1 1/2	21,053	1 1/2	33,587	1 1/2	46,951	1 1/2	60,870	1 1/2	74,797	1 1/2	88,724	1 1/2	102,650	1 1/2	116,577	1 1/2	130,502
3/4	9,556	3/4	21,307	3/4	33,856	3/4	47,239	3/4	61,160	3/4	75,087	3/4	89,014	3/4	102,941	3/4	116,867	3/4	130,792
11	9,792	11	21,560	11	34,125	11	47,527	11	61,450	11	75,377	11	89,304	11	103,231	11	117,157	11	131,082
1 1/4	10,029	1 1/4	21,814	1 1/4	34,395	1 1/4	47,816	1 1/4	61,741	1 1/4	75,667	1 1/4	89,594	1 1/4	103,521	1 1/4	117,447	1 1/4	131,372
1 1/2	10,266	1 1/2	22,069	1 1/2	34,665	1 1/2	48,106	1 1/2	62,031	1 1/2	75,957	1 1/2	89,884	1 1/2	103,811	1 1/2	117,737	1 1/2	131,662
3/4	10,503	3/4	22,324	3/4	34,935	3/4	48,395	3/4	62,321	3/4	76,248	3/4	90,174	3/4	104,101	3/4	118,028	3/4	131,952

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.
 CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.
 CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.
 CAPACITY TABLE ONLY APPLIES TO INNAGE GAUGES TAKEN TO TOP OF 2" DIAMETER PIPE.
 GAUGE POINT: (2" PIPE) LOCATED 12'-06" OFF CENTERLINE AND 44'-06" FORWARD OF AFT BULKHEAD.

PRECISION MEASUREMENT
 & ANALYSIS, INC.
 P.O. Box 2092
 Pearland, Texas 77665
<http://www.pmacorp.net>

p.2

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Tres Palacios Marine

Oct 14 13 02:03p



BARGE "CCL 409"

1 PORT INNAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-10 3/4"

IN	10 FT.	IN	11 FT.	IN	12 FT.	IN	13 FT.	IN	14 FT.	IN	15 FT.	IN	16 FT.	IN	17 FT.	IN	18 FT.	IN	19 FT.
0	132,243	0	146,167	0	160,092	0	173,983	0		0		0		0		0		0	
1/4	132,633	1/4	146,458	1/4	160,383	1/4	174,272	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	132,823	1/2	146,748	1/2	160,673	1/2	174,560	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	133,113	3/4	147,038	3/4	160,963	3/4	174,849	3/4		3/4		3/4		3/4		3/4		3/4	
1	133,403	1	147,328	1	161,253	1	175,137	1		1		1		1		1		1	
1 1/4	133,693	1 1/4	147,618	1 1/4	161,543	1 1/4	175,426	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	133,983	1 1/2	147,908	1 1/2	161,833	1 1/2	175,714	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
1 3/4	134,273	1 3/4	148,198	1 3/4	162,123	1 3/4	176,002	1 3/4		1 3/4		1 3/4		1 3/4		1 3/4		1 3/4	
2	134,563	2	148,488	2	162,413	2	176,291	2		2		2		2		2		2	
2 1/4	134,854	2 1/4	148,778	2 1/4	162,703	2 1/4	176,579	2 1/4		2 1/4		2 1/4		2 1/4		2 1/4		2 1/4	
2 1/2	135,144	2 1/2	149,069	2 1/2	162,993	2 1/2	176,868	2 1/2		2 1/2		2 1/2		2 1/2		2 1/2		2 1/2	
2 3/4	135,434	2 3/4	149,359	2 3/4	163,284	2 3/4	177,158	2 3/4		2 3/4		2 3/4		2 3/4		2 3/4		2 3/4	
3	135,724	3	149,649	3	163,574	3	177,444	3		3		3		3		3		3	
3 1/4	136,014	3 1/4	149,939	3 1/4	163,864	3 1/4	177,733	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
3 1/2	136,304	3 1/2	150,229	3 1/2	164,154	3 1/2	178,021	3 1/2		3 1/2		3 1/2		3 1/2		3 1/2		3 1/2	
3 3/4	136,594	3 3/4	150,519	3 3/4	164,444	3 3/4	178,310	3 3/4		3 3/4		3 3/4		3 3/4		3 3/4		3 3/4	
4	136,884	4	150,809	4	164,734	4	178,598	4		4		4		4		4		4	
4 1/4	137,174	4 1/4	151,099	4 1/4	165,024	4 1/4	178,886	4 1/4		4 1/4		4 1/4		4 1/4		4 1/4		4 1/4	
4 1/2	137,464	4 1/2	151,389	4 1/2	165,314	4 1/2	179,175	4 1/2		4 1/2		4 1/2		4 1/2		4 1/2		4 1/2	
4 3/4	137,754	4 3/4	151,679	4 3/4	165,604	4 3/4	179,463	4 3/4		4 3/4		4 3/4		4 3/4		4 3/4		4 3/4	
5	138,045	5	151,970	5	165,894	5	179,752	5		5		5		5		5		5	
5 1/4	138,335	5 1/4	152,260	5 1/4	166,185	5 1/4	180,040	5 1/4		5 1/4		5 1/4		5 1/4		5 1/4		5 1/4	
5 1/2	138,625	5 1/2	152,550	5 1/2	166,475	5 1/2	180,328	5 1/2		5 1/2		5 1/2		5 1/2		5 1/2		5 1/2	
5 3/4	138,915	5 3/4	152,840	5 3/4	166,765	5 3/4	180,617	5 3/4		5 3/4		5 3/4		5 3/4		5 3/4		5 3/4	
6	139,205	6	153,130	6	167,055	6	180,905	6		6		6		6		6		6	
6 1/4	139,495	6 1/4	153,420	6 1/4	167,345	6 1/4	181,194	6 1/4		6 1/4		6 1/4		6 1/4		6 1/4		6 1/4	
6 1/2	139,785	6 1/2	153,710	6 1/2	167,635	6 1/2	181,482	6 1/2		6 1/2		6 1/2		6 1/2		6 1/2		6 1/2	
6 3/4	140,075	6 3/4	154,000	6 3/4	167,925	6 3/4	181,771	6 3/4		6 3/4		6 3/4		6 3/4		6 3/4		6 3/4	
7	140,365	7	154,290	7	168,215	7	182,059	7		7		7		7		7		7	
7 1/4	140,655	7 1/4	154,580	7 1/4	168,504	7 1/4	182,344	7 1/4		7 1/4		7 1/4		7 1/4		7 1/4		7 1/4	
7 1/2	140,946	7 1/2	154,871	7 1/2	168,792	7 1/2	182,630	7 1/2		7 1/2		7 1/2		7 1/2		7 1/2		7 1/2	
7 3/4	141,236	7 3/4	155,161	7 3/4	169,081	7 3/4	182,915	7 3/4		7 3/4		7 3/4		7 3/4		7 3/4		7 3/4	
8	141,526	8	155,451	8	169,369	8	183,200	8		8		8		8		8		8	
8 1/4	141,816	8 1/4	155,741	8 1/4	169,657	8 1/4	183,474	8 1/4		8 1/4		8 1/4		8 1/4		8 1/4		8 1/4	
8 1/2	142,106	8 1/2	156,031	8 1/2	169,946	8 1/2	183,741	8 1/2		8 1/2		8 1/2		8 1/2		8 1/2		8 1/2	
8 3/4	142,396	8 3/4	156,321	8 3/4	170,234	8 3/4	184,012	8 3/4		8 3/4		8 3/4		8 3/4		8 3/4		8 3/4	
9	142,686	9	156,611	9	170,523	9	184,282	9		9		9		9		9		9	
9 1/4	142,976	9 1/4	156,901	9 1/4	170,811	9 1/4	184,502	9 1/4		9 1/4		9 1/4		9 1/4		9 1/4		9 1/4	
9 1/2	143,266	9 1/2	157,191	9 1/2	171,099	9 1/2	184,721	9 1/2		9 1/2		9 1/2		9 1/2		9 1/2		9 1/2	
9 3/4	143,557	9 3/4	157,481	9 3/4	171,388	9 3/4	184,941	9 3/4		9 3/4		9 3/4		9 3/4		9 3/4		9 3/4	
10	143,847	10	157,772	10	171,676	10		10		10		10		10		10		10	
10 1/4	144,137	10 1/4	158,062	10 1/4	171,965	10 1/4		10 1/4		10 1/4		10 1/4		10 1/4		10 1/4		10 1/4	
10 1/2	144,427	10 1/2	158,352	10 1/2	172,253	10 1/2		10 1/2		10 1/2		10 1/2		10 1/2		10 1/2		10 1/2	
10 3/4	144,717	10 3/4	158,642	10 3/4	172,541	10 3/4		10 3/4		10 3/4		10 3/4		10 3/4		10 3/4		10 3/4	
11	145,007	11	158,932	11	172,830	11		11		11		11		11		11		11	
11 1/4	145,297	11 1/4	159,222	11 1/4	173,118	11 1/4		11 1/4		11 1/4		11 1/4		11 1/4		11 1/4		11 1/4	
11 1/2	145,587	11 1/2	159,512	11 1/2	173,407	11 1/2		11 1/2		11 1/2		11 1/2		11 1/2		11 1/2		11 1/2	
11 3/4	145,877	11 3/4	159,802	11 3/4	173,695	11 3/4		11 3/4		11 3/4		11 3/4		11 3/4		11 3/4		11 3/4	

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCEL'S AND SUPERCEDES
ALL PRIOR TO 07/2013

PRECISION MEASUREMENT
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BARGE "CCL 409"

2 STBD

INNAGE TABLE

GAUGE HEIGHT 14'-11 1/2"

CAPACITIES GIVEN IN WHOLE GALLONS

IN	0 FT.	IN	1 FT.	IN	2 FT.	IN	3 FT.	IN	4 FT.	IN	5 FT.	IN	6 FT.	IN	7 FT.	IN	8 FT.	IN	9 FT.
0	792	0	16,847	0	32,925	0	49,216	0	65,509	0	81,802	0	98,095	0	114,388	0	130,681	0	146,974
1/4	1,034	1/4	16,986	1/4	33,264	1/4	49,666	1/4	66,049	1/4	82,442	1/4	98,835	1/4	115,228	1/4	131,621	1/4	148,014
1/2	1,276	1/2	17,326	1/2	33,603	1/2	49,895	1/2	66,188	1/2	82,481	1/2	98,874	1/2	115,267	1/2	131,660	1/2	148,052
3/4	1,519	3/4	17,665	3/4	33,942	3/4	50,235	3/4	66,528	3/4	82,821	3/4	99,114	3/4	115,406	3/4	131,699	3/4	148,092
1	1,761	1	18,004	1	34,281	1	50,574	1	66,867	1	83,160	1	99,453	1	115,746	1	132,039	1	148,331
1 1/4	2,089	1 1/4	18,344	1 1/4	34,621	1 1/4	50,914	1 1/4	67,207	1 1/4	83,499	1 1/4	99,792	1 1/4	116,085	1 1/4	132,378	1 1/4	148,670
1 1/2	2,416	1 1/2	18,683	1 1/2	34,960	1 1/2	51,253	1 1/2	67,546	1 1/2	83,839	1 1/2	100,132	1 1/2	116,425	1 1/2	132,718	1 1/2	149,010
3/4	2,743	3/4	19,023	3/4	35,300	3/4	51,593	3/4	67,889	3/4	84,178	3/4	100,471	3/4	116,764	3/4	133,057	3/4	149,349
2	3,070	2	19,362	2	35,639	2	51,932	2	68,225	2	84,518	2	100,811	2	117,104	2	133,396	2	149,689
1 1/4	3,410	1 1/4	19,702	1 1/4	35,978	1 1/4	52,271	1 1/4	68,564	1 1/4	84,857	1 1/4	101,150	1 1/4	117,443	1 1/4	133,736	1 1/4	150,028
1 1/2	3,749	1 1/2	20,041	1 1/2	36,318	1 1/2	52,611	1 1/2	68,904	1 1/2	85,197	1 1/2	101,490	1 1/2	117,782	1 1/2	134,075	1 1/2	150,367
3/4	4,089	3/4	20,380	3/4	36,657	3/4	52,950	3/4	69,243	3/4	85,536	3/4	101,829	3/4	118,122	3/4	134,415	3/4	150,707
3	4,428	3	20,720	3	36,997	3	53,290	3	69,583	3	85,876	3	102,168	3	118,461	3	134,754	3	151,046
1 1/4	4,767	1 1/4	21,059	1 1/4	37,336	1 1/4	53,629	1 1/4	69,922	1 1/4	86,215	1 1/4	102,508	1 1/4	118,801	1 1/4	135,094	1 1/4	151,386
1 1/2	5,107	1 1/2	21,399	1 1/2	37,676	1 1/2	53,969	1 1/2	70,261	1 1/2	86,554	1 1/2	102,847	1 1/2	119,140	1 1/2	135,433	1 1/2	151,726
3/4	5,445	3/4	21,738	3/4	38,015	3/4	54,308	3/4	70,601	3/4	86,894	3/4	103,187	3/4	119,480	3/4	135,773	3/4	152,064
4	5,786	4	22,077	4	38,355	4	54,647	4	70,940	4	87,233	4	103,526	4	119,819	4	136,112	4	152,404
1 1/4	6,125	1 1/4	22,417	1 1/4	38,694	1 1/4	54,987	1 1/4	71,280	1 1/4	87,673	1 1/4	103,866	1 1/4	120,159	1 1/4	136,451	1 1/4	152,743
1 1/2	6,465	1 1/2	22,756	1 1/2	39,033	1 1/2	55,326	1 1/2	71,619	1 1/2	87,912	1 1/2	104,206	1 1/2	120,498	1 1/2	136,791	1 1/2	153,082
3/4	6,804	3/4	23,096	3/4	39,373	3/4	55,666	3/4	71,959	3/4	88,252	3/4	104,544	3/4	120,837	3/4	137,130	3/4	153,422
5	7,143	5	23,436	5	39,712	5	56,005	5	72,298	5	88,591	5	104,884	5	121,177	5	137,470	5	153,761
1 1/4	7,483	1 1/4	23,774	1 1/4	40,052	1 1/4	56,345	1 1/4	72,638	1 1/4	88,930	1 1/4	105,223	1 1/4	121,516	1 1/4	137,809	1 1/4	154,101
1 1/2	7,822	1 1/2	24,113	1 1/2	40,391	1 1/2	56,684	1 1/2	72,977	1 1/2	89,270	1 1/2	105,563	1 1/2	121,856	1 1/2	138,149	1 1/2	154,440
3/4	8,162	3/4	24,452	3/4	40,731	3/4	57,023	3/4	73,316	3/4	89,609	3/4	105,902	3/4	122,195	3/4	138,488	3/4	154,779
6	8,501	6	24,791	6	41,070	6	57,363	6	73,656	6	89,949	6	106,242	6	122,535	6	138,827	6	155,119
1 1/4	8,840	1 1/4	25,130	1 1/4	41,409	1 1/4	57,702	1 1/4	73,995	1 1/4	90,288	1 1/4	106,581	1 1/4	122,874	1 1/4	139,167	1 1/4	155,458
1 1/2	9,180	1 1/2	25,469	1 1/2	41,749	1 1/2	58,042	1 1/2	74,336	1 1/2	90,628	1 1/2	106,921	1 1/2	123,213	1 1/2	139,506	1 1/2	155,798
3/4	9,519	3/4	25,808	3/4	42,088	3/4	58,381	3/4	74,674	3/4	90,967	3/4	107,260	3/4	123,553	3/4	139,846	3/4	156,137
7	9,859	7	26,147	7	42,428	7	58,721	7	75,014	7	91,306	7	107,599	7	123,892	7	140,185	7	156,476
1 1/4	10,198	1 1/4	26,486	1 1/4	42,767	1 1/4	59,060	1 1/4	75,353	1 1/4	91,646	1 1/4	107,939	1 1/4	124,232	1 1/4	140,525	1 1/4	156,816
1 1/2	10,537	1 1/2	26,825	1 1/2	43,107	1 1/2	59,400	1 1/2	75,692	1 1/2	91,985	1 1/2	108,278	1 1/2	124,571	1 1/2	140,864	1 1/2	157,155
3/4	10,877	3/4	27,164	3/4	43,446	3/4	59,739	3/4	76,032	3/4	92,325	3/4	108,618	3/4	124,911	3/4	141,204	3/4	157,494
8	11,216	8	27,503	8	43,785	8	60,078	8	76,371	8	92,664	8	108,957	8	125,250	8	141,543	8	157,834
1 1/4	11,556	1 1/4	27,842	1 1/4	44,125	1 1/4	60,418	1 1/4	76,711	1 1/4	93,004	1 1/4	109,297	1 1/4	125,589	1 1/4	141,882	1 1/4	158,173
1 1/2	11,895	1 1/2	28,180	1 1/2	44,464	1 1/2	60,757	1 1/2	77,050	1 1/2	93,343	1 1/2	109,636	1 1/2	125,929	1 1/2	142,222	1 1/2	158,513
3/4	12,234	3/4	28,519	3/4	44,804	3/4	61,097	3/4	77,390	3/4	93,683	3/4	109,975	3/4	126,268	3/4	142,561	3/4	158,852
9	12,574	9	28,858	9	45,143	9	61,436	9	77,729	9	94,022	9	110,315	9	126,608	9	142,901	9	159,191
1 1/4	12,913	1 1/4	29,197	1 1/4	45,483	1 1/4	61,776	1 1/4	78,068	1 1/4	94,361	1 1/4	110,654	1 1/4	126,947	1 1/4	143,240	1 1/4	159,531
1 1/2	13,253	1 1/2	29,536	1 1/2	45,822	1 1/2	62,116	1 1/2	78,408	1 1/2	94,701	1 1/2	110,994	1 1/2	127,287	1 1/2	143,580	1 1/2	159,870
3/4	13,592	3/4	29,875	3/4	46,162	3/4	62,454	3/4	78,747	3/4	95,040	3/4	111,333	3/4	127,626	3/4	143,919	3/4	160,210
10	13,932	10	30,213	10	46,501	10	62,794	10	79,087	10	95,380	10	111,673	10	127,966	10	144,258	10	160,549
1 1/4	14,271	1 1/4	30,552	1 1/4	46,840	1 1/4	63,133	1 1/4	79,426	1 1/4	95,719	1 1/4	112,012	1 1/4	128,306	1 1/4	144,598	1 1/4	160,888
1 1/2	14,610	1 1/2	30,891	1 1/2	47,180	1 1/2	63,473	1 1/2	79,766	1 1/2	96,059	1 1/2	112,351	1 1/2	128,644	1 1/2	144,937	1 1/2	161,228
3/4	14,950	3/4	31,230	3/4	47,519	3/4	63,812	3/4	80,105	3/4	96,398	3/4	112,691	3/4	128,984	3/4	145,277	3/4	161,567
11	15,289	11	31,569	11	47,859	11	64,152	11	80,445	11	96,737	11	113,030	11	129,323	11	145,616	11	161,906
1 1/4	15,629	1 1/4	31,908	1 1/4	48,198	1 1/4	64,491	1 1/4	80,784	1 1/4	97,077	1 1/4	113,370	1 1/4	129,663	1 1/4	145,956	1 1/4	162,246
1 1/2	15,968	1 1/2	32,247	1 1/2	48,538	1 1/2	64,831	1 1/2	81,123	1 1/2	97,416	1 1/2	113,709	1 1/2	130,002	1 1/2	146,295	1 1/2	162,585
3/4	16,307	3/4	32,586	3/4	48,877	3/4	65,170	3/4	81,463	3/4	97,756	3/4	114,048	3/4	130,342	3/4	146,634	3/4	162,925

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.
 CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.
 CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.
 CAPACITY TABLE ONLY APPLIES TO INNAGE GAUGES TAKEN TO TOP OF 2" DIAMETER PIPE.
 GAUGE POINT: (2" PIPE) LOCATED 12'-05" OFF CENTERLINE AND 43'-03" FORWARD OF AFT BULKHEAD.

PRECISION MEASUREMENT
 & ANALYSIS, INC.
 P.O. Box 2092
 Pearland, Texas 77688
<http://www.pmsa.com>



BARGE "CCL 409"

2 STBD INNAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-11 1/2"

IN	10 FT.	IN	11 FT.	IN	12 FT.	IN	13 FT.	IN	14 FT.	IN	15 FT.	IN	16 FT.	IN	17 FT.	IN	18 FT.	IN	19 FT.
0	163,264	0	179,554	0	195,845	0	212,086	0		0		0		0		0		0	
1/4	163,603	1/4	179,894	1/4	196,184	1/4	212,433	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	163,943	1/2	180,233	1/2	196,524	1/2	212,771	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	164,282	3/4	180,573	3/4	196,863	3/4	213,108	3/4		3/4		3/4		3/4		3/4		3/4	
1	164,622	1	180,912	1	197,203	1	213,446	1		1		1		1		1		1	
1 1/4	164,961	1 1/4	181,251	1 1/4	197,542	1 1/4	213,783	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	165,300	1 1/2	181,591	1 1/2	197,881	1 1/2	214,120	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/2	165,640	3/2	181,930	3/2	198,221	3/2	214,458	3/2		3/2		3/2		3/2		3/2		3/2	
2	165,979	2	182,270	2	198,560	2	214,795	2		2		2		2		2		2	
2 1/4	166,318	2 1/4	182,609	2 1/4	198,899	2 1/4	215,133	2 1/4		2 1/4		2 1/4		2 1/4		2 1/4		2 1/4	
2 1/2	166,658	2 1/2	182,948	2 1/2	199,239	2 1/2	215,470	2 1/2		2 1/2		2 1/2		2 1/2		2 1/2		2 1/2	
3 1/4	166,997	3 1/4	183,288	3 1/4	199,578	3 1/4	215,807	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
3	167,337	3	183,627	3	199,918	3	216,146	3		3		3		3		3		3	
3 1/4	167,676	3 1/4	183,967	3 1/4	200,257	3 1/4	216,482	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
3 1/2	168,015	3 1/2	184,306	3 1/2	200,596	3 1/2	216,820	3 1/2		3 1/2		3 1/2		3 1/2		3 1/2		3 1/2	
4	168,355	4	184,645	4	200,936	4	217,157	4		4		4		4		4		4	
4 1/4	168,694	4 1/4	184,985	4 1/4	201,275	4 1/4	217,494	4 1/4		4 1/4		4 1/4		4 1/4		4 1/4		4 1/4	
4 1/2	169,034	4 1/2	185,324	4 1/2	201,615	4 1/2	217,832	4 1/2		4 1/2		4 1/2		4 1/2		4 1/2		4 1/2	
5 1/4	169,373	5 1/4	185,663	5 1/4	201,954	5 1/4	218,169	5 1/4		5 1/4		5 1/4		5 1/4		5 1/4		5 1/4	
5 1/2	169,712	5 1/2	186,003	5 1/2	202,293	5 1/2	218,507	5 1/2		5 1/2		5 1/2		5 1/2		5 1/2		5 1/2	
5	170,052	5	186,342	5	202,633	5	218,844	5		5		5		5		5		5	
5 1/4	170,391	5 1/4	186,682	5 1/4	202,972	5 1/4	219,181	5 1/4		5 1/4		5 1/4		5 1/4		5 1/4		5 1/4	
5 1/2	170,730	5 1/2	187,021	5 1/2	203,311	5 1/2	219,519	5 1/2		5 1/2		5 1/2		5 1/2		5 1/2		5 1/2	
6 1/4	171,070	6 1/4	187,360	6 1/4	203,651	6 1/4	219,856	6 1/4		6 1/4		6 1/4		6 1/4		6 1/4		6 1/4	
6 1/2	171,409	6 1/2	187,700	6 1/2	203,990	6 1/2	220,194	6 1/2		6 1/2		6 1/2		6 1/2		6 1/2		6 1/2	
7 1/4	171,749	7 1/4	188,039	7 1/4	204,330	7 1/4	220,531	7 1/4		7 1/4		7 1/4		7 1/4		7 1/4		7 1/4	
7 1/2	172,088	7 1/2	188,379	7 1/2	204,669	7 1/2	220,868	7 1/2		7 1/2		7 1/2		7 1/2		7 1/2		7 1/2	
8 1/4	172,427	8 1/4	188,718	8 1/4	205,008	8 1/4	221,206	8 1/4		8 1/4		8 1/4		8 1/4		8 1/4		8 1/4	
8 1/2	172,767	8 1/2	189,057	8 1/2	205,348	8 1/2	221,543	8 1/2		8 1/2		8 1/2		8 1/2		8 1/2		8 1/2	
9 1/4	173,106	9 1/4	189,397	9 1/4	205,685	9 1/4	221,877	9 1/4		9 1/4		9 1/4		9 1/4		9 1/4		9 1/4	
9 1/2	173,446	9 1/2	189,736	9 1/2	206,023	9 1/2	222,211	9 1/2		9 1/2		9 1/2		9 1/2		9 1/2		9 1/2	
10 1/4	173,785	10 1/4	190,075	10 1/4	206,360	10 1/4	222,545	10 1/4		10 1/4		10 1/4		10 1/4		10 1/4		10 1/4	
10 1/2	174,124	10 1/2	190,415	10 1/2	206,697	10 1/2	222,879	10 1/2		10 1/2		10 1/2		10 1/2		10 1/2		10 1/2	
11 1/4	174,464	11 1/4	190,754	11 1/4	207,036	11 1/4	223,196	11 1/4		11 1/4		11 1/4		11 1/4		11 1/4		11 1/4	
11 1/2	174,803	11 1/2	191,094	11 1/2	207,372	11 1/2	223,512	11 1/2		11 1/2		11 1/2		11 1/2		11 1/2		11 1/2	
12 1/4	175,142	12 1/4	191,433	12 1/4	207,710	12 1/4	223,828	12 1/4		12 1/4		12 1/4		12 1/4		12 1/4		12 1/4	
12 1/2	175,482	12 1/2	191,772	12 1/2	208,047	12 1/2	224,144	12 1/2		12 1/2		12 1/2		12 1/2		12 1/2		12 1/2	
13 1/4	175,821	13 1/4	192,112	13 1/4	208,384	13 1/4	224,401	13 1/4		13 1/4		13 1/4		13 1/4		13 1/4		13 1/4	
13 1/2	176,161	13 1/2	192,451	13 1/2	208,722	13 1/2	224,658	13 1/2		13 1/2		13 1/2		13 1/2		13 1/2		13 1/2	
14 1/4	176,500	14 1/4	192,791	14 1/4	209,059	14 1/4	224,914	14 1/4		14 1/4		14 1/4		14 1/4		14 1/4		14 1/4	
14 1/2	176,839	14 1/2	193,130	14 1/2	209,397	14 1/2		14 1/2		14 1/2		14 1/2		14 1/2		14 1/2		14 1/2	
15 1/4	177,179	15 1/4	193,469	15 1/4	209,734	15 1/4		15 1/4		15 1/4		15 1/4		15 1/4		15 1/4		15 1/4	
15 1/2	177,518	15 1/2	193,809	15 1/2	210,071	15 1/2		15 1/2		15 1/2		15 1/2		15 1/2		15 1/2		15 1/2	
16 1/4	177,858	16 1/4	194,148	16 1/4	210,409	16 1/4		16 1/4		16 1/4		16 1/4		16 1/4		16 1/4		16 1/4	
16 1/2	178,197	16 1/2	194,487	16 1/2	210,746	16 1/2		16 1/2		16 1/2		16 1/2		16 1/2		16 1/2		16 1/2	
17 1/4	178,535	17 1/4	194,827	17 1/4	211,084	17 1/4		17 1/4		17 1/4		17 1/4		17 1/4		17 1/4		17 1/4	
17 1/2	178,876	17 1/2	195,166	17 1/2	211,421	17 1/2		17 1/2		17 1/2		17 1/2		17 1/2		17 1/2		17 1/2	
18 1/4	179,215	18 1/4	195,506	18 1/4	211,759	18 1/4		18 1/4		18 1/4		18 1/4		18 1/4		18 1/4		18 1/4	

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

PRECISION MEASUREMENT
& ANALYSIS, INC.
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BARGE "CCL 409"

2 PORT INNAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-11"

IN	0 FT.	IN	1 FT.	IN	2 FT.	IN	3 FT.	IN	4 FT.	IN	5 FT.	IN	6 FT.	IN	7 FT.	IN	8 FT.	IN	9 FT.
0	792	0	16,654	0	32,822	0	48,613	0	64,913	0	81,214	0	97,614	0	113,814	0	130,114	0	146,414
1/4	1,035	1/4	16,994	1/4	32,848	1/4	48,953	1/4	65,253	1/4	81,553	1/4	97,853	1/4	114,153	1/4	130,454	1/4	146,753
1/2	1,277	1/2	17,333	1/2	33,174	1/2	49,292	1/2	65,593	1/2	81,893	1/2	98,193	1/2	114,493	1/2	130,793	1/2	147,093
3/4	1,620	3/4	17,673	3/4	33,600	3/4	49,632	3/4	65,932	3/4	82,232	3/4	98,532	3/4	114,833	3/4	131,133	3/4	147,432
1	1,762	1	18,012	1	33,826	1	49,972	1	66,272	1	82,572	1	98,872	1	115,172	1	131,472	1	147,772
1 1/4	2,089	1 1/4	18,362	1 1/4	34,163	1 1/4	50,311	1 1/4	66,611	1 1/4	82,911	1 1/4	99,212	1 1/4	115,512	1 1/4	131,812	1 1/4	148,111
1 1/2	2,417	1 1/2	18,692	1 1/2	34,479	1 1/2	50,651	1 1/2	66,951	1 1/2	83,251	1 1/2	99,551	1 1/2	115,851	1 1/2	132,162	1 1/2	148,481
3 1/4	2,744	3 1/4	19,031	3 1/4	34,806	3 1/4	50,990	3 1/4	67,290	3 1/4	83,591	3 1/4	99,891	3 1/4	116,191	3 1/4	132,491	3 1/4	148,791
2	3,072	2	19,371	2	35,132	2	51,330	2	67,630	2	83,930	2	100,230	2	116,531	2	132,831	2	149,130
1 1/4	3,411	1 1/4	19,710	1 1/4	35,459	1 1/4	51,669	1 1/4	67,970	1 1/4	84,270	1 1/4	100,570	1 1/4	116,870	1 1/4	133,170	1 1/4	149,470
1 1/2	3,751	1 1/2	20,050	1 1/2	35,786	1 1/2	52,009	1 1/2	68,309	1 1/2	84,609	1 1/2	100,910	1 1/2	117,210	1 1/2	133,510	1 1/2	149,809
3 1/4	4,080	3 1/4	20,389	3 1/4	36,113	3 1/4	52,349	3 1/4	68,649	3 1/4	84,949	3 1/4	101,249	3 1/4	117,549	3 1/4	133,849	3 1/4	150,149
3	4,430	3	20,729	3	36,439	3	52,688	3	68,988	3	85,288	3	101,589	3	117,889	3	134,189	3	150,488
1 3/4	4,770	1 3/4	21,069	1 3/4	36,766	1 3/4	53,028	1 3/4	69,328	1 3/4	85,628	1 3/4	101,928	1 3/4	118,228	1 3/4	134,529	1 3/4	150,828
1 1/2	5,109	1 1/2	21,408	1 1/2	37,093	1 1/2	53,367	1 1/2	69,668	1 1/2	85,968	1 1/2	102,268	1 1/2	118,568	1 1/2	134,868	1 1/2	151,167
3 1/4	5,449	3 1/4	21,748	3 1/4	37,420	3 1/4	53,707	3 1/4	70,007	3 1/4	86,307	3 1/4	102,607	3 1/4	118,908	3 1/4	135,208	3 1/4	151,507
4	5,788	4	22,087	4	37,746	4	54,047	4	70,347	4	86,647	4	102,947	4	119,247	4	135,547	4	151,846
1 1/4	6,128	1 1/4	22,414	1 1/4	38,086	1 1/4	54,386	1 1/4	70,686	1 1/4	86,986	1 1/4	103,287	1 1/4	119,587	1 1/4	135,887	1 1/4	152,186
1 1/2	6,467	1 1/2	22,740	1 1/2	38,426	1 1/2	54,726	1 1/2	71,026	1 1/2	87,326	1 1/2	103,626	1 1/2	119,926	1 1/2	136,227	1 1/2	152,526
3 1/4	6,807	3 1/4	23,067	3 1/4	38,765	3 1/4	55,065	3 1/4	71,365	3 1/4	87,666	3 1/4	103,966	3 1/4	120,266	3 1/4	136,566	3 1/4	152,866
5	7,147	5	23,393	5	39,105	5	55,406	5	71,705	5	88,005	5	104,305	5	120,606	5	136,906	5	153,205
1 1/4	7,486	1 1/4	23,719	1 1/4	39,444	1 1/4	55,744	1 1/4	72,045	1 1/4	88,345	1 1/4	104,645	1 1/4	120,945	1 1/4	137,245	1 1/4	153,544
1 1/2	7,826	1 1/2	24,045	1 1/2	39,784	1 1/2	56,084	1 1/2	72,384	1 1/2	88,684	1 1/2	104,985	1 1/2	121,285	1 1/2	137,585	1 1/2	153,884
3 1/4	8,165	3 1/4	24,371	3 1/4	40,124	3 1/4	56,424	3 1/4	72,724	3 1/4	89,024	3 1/4	105,324	3 1/4	121,624	3 1/4	137,925	3 1/4	154,223
6	8,505	6	24,697	6	40,463	6	56,763	6	73,063	6	89,364	6	105,664	6	121,964	6	138,264	6	154,563
1 1/4	8,844	1 1/4	25,024	1 1/4	40,803	1 1/4	57,103	1 1/4	73,403	1 1/4	89,703	1 1/4	106,003	1 1/4	122,304	1 1/4	138,604	1 1/4	154,902
1 1/2	9,184	1 1/2	25,350	1 1/2	41,142	1 1/2	57,442	1 1/2	73,743	1 1/2	90,043	1 1/2	106,343	1 1/2	122,643	1 1/2	138,943	1 1/2	155,242
3 1/4	9,523	3 1/4	25,676	3 1/4	41,482	3 1/4	57,782	3 1/4	74,082	3 1/4	90,382	3 1/4	106,683	3 1/4	122,983	3 1/4	139,283	3 1/4	155,581
7	9,863	7	26,002	7	41,821	7	58,122	7	74,422	7	90,722	7	107,022	7	123,322	7	139,622	7	155,921
1 1/4	10,203	1 1/4	26,328	1 1/4	42,161	1 1/4	58,461	1 1/4	74,761	1 1/4	91,062	1 1/4	107,362	1 1/4	123,662	1 1/4	139,962	1 1/4	156,260
1 1/2	10,542	1 1/2	26,654	1 1/2	42,501	1 1/2	58,801	1 1/2	75,101	1 1/2	91,401	1 1/2	107,701	1 1/2	124,001	1 1/2	140,302	1 1/2	156,600
3 1/4	10,882	3 1/4	26,980	3 1/4	42,840	3 1/4	59,140	3 1/4	75,441	3 1/4	91,741	3 1/4	108,041	3 1/4	124,341	3 1/4	140,641	3 1/4	156,939
8	11,221	8	27,306	8	43,180	8	59,480	8	75,780	8	92,080	8	108,380	8	124,681	8	140,981	8	157,279
1 1/4	11,561	1 1/4	27,632	1 1/4	43,519	1 1/4	59,820	1 1/4	76,120	1 1/4	92,420	1 1/4	108,720	1 1/4	125,020	1 1/4	141,320	1 1/4	157,618
1 1/2	11,900	1 1/2	27,958	1 1/2	43,859	1 1/2	60,159	1 1/2	76,459	1 1/2	92,759	1 1/2	109,060	1 1/2	125,360	1 1/2	141,660	1 1/2	157,958
3 1/4	12,240	3 1/4	28,284	3 1/4	44,199	3 1/4	60,499	3 1/4	76,799	3 1/4	93,099	3 1/4	109,399	3 1/4	125,699	3 1/4	142,000	3 1/4	158,298
9	12,579	9	28,610	9	44,538	9	60,838	9	77,138	9	93,439	9	109,739	9	126,039	9	142,339	9	158,637
1 1/4	12,919	1 1/4	28,936	1 1/4	44,878	1 1/4	61,178	1 1/4	77,478	1 1/4	93,778	1 1/4	110,078	1 1/4	126,379	1 1/4	142,679	1 1/4	158,977
1 1/2	13,259	1 1/2	29,261	1 1/2	45,217	1 1/2	61,517	1 1/2	77,818	1 1/2	94,118	1 1/2	110,418	1 1/2	126,718	1 1/2	143,018	1 1/2	159,316
3 1/4	13,598	3 1/4	29,587	3 1/4	45,557	3 1/4	61,857	3 1/4	78,157	3 1/4	94,457	3 1/4	110,758	3 1/4	127,058	3 1/4	143,358	3 1/4	159,656
10	13,938	10	29,913	10	45,896	10	62,197	10	78,497	10	94,797	10	111,097	10	127,397	10	143,697	10	159,995
1 1/4	14,277	1 1/4	30,239	1 1/4	46,236	1 1/4	62,536	1 1/4	78,836	1 1/4	95,137	1 1/4	111,437	1 1/4	127,737	1 1/4	144,037	1 1/4	160,335
1 1/2	14,617	1 1/2	30,565	1 1/2	46,576	1 1/2	62,876	1 1/2	79,176	1 1/2	95,476	1 1/2	111,776	1 1/2	128,076	1 1/2	144,377	1 1/2	160,674
3 1/4	14,956	3 1/4	30,892	3 1/4	46,915	3 1/4	63,215	3 1/4	79,516	3 1/4	95,816	3 1/4	112,116	3 1/4	128,416	3 1/4	144,716	3 1/4	161,014
11	15,296	11	31,218	11	47,256	11	63,555	11	79,855	11	96,155	11	112,455	11	128,756	11	145,056	11	161,353
1 1/4	15,636	1 1/4	31,544	1 1/4	47,594	1 1/4	63,895	1 1/4	80,195	1 1/4	96,495	1 1/4	112,795	1 1/4	129,095	1 1/4	145,395	1 1/4	161,693
1 1/2	15,976	1 1/2	31,870	1 1/2	47,934	1 1/2	64,234	1 1/2	80,534	1 1/2	96,835	1 1/2	113,135	1 1/2	129,435	1 1/2	145,735	1 1/2	162,032
3 1/4	16,315	3 1/4	32,196	3 1/4	48,274	3 1/4	64,574	3 1/4	80,874	3 1/4	97,174	3 1/4	113,474	3 1/4	129,774	3 1/4	146,074	3 1/4	162,372

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.
 CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.
 CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.
 CAPACITY TABLE ONLY APPLIES TO INNAGE GAUGES TAKEN TO TOP OF 2" DIAMETER PIPE.
 GAUGE POINT: (2" PIPE) LOCATED 12'-06" OFF CENTERLINE AND 43'-03" FORWARD OF AFT BULKHEAD.

PRECISION MEASUREMENT
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BARGE "CCL 409"

2 PORT INNAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-11"

IN	10 FT.	IN	11 FT.	IN	12 FT.	IN	13 FT.	IN	14 FT.	IN	15 FT.	IN	16 FT.	IN	17 FT.	IN	18 FT.	IN	19 FT.
0	162,712	0	178,009	0	195,307	0	211,585	0		0		0		0		0		0	
1/4	163,051	1/4	179,349	1/4	195,647	1/4	211,903	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	163,391	1/2	179,688	1/2	195,986	1/2	212,241	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	163,730	3/4	180,028	3/4	196,326	3/4	212,578	3/4		3/4		3/4		3/4		3/4		3/4	
1	164,070	1	180,367	1	196,665	1	212,916	1		1		1		1		1		1	
1 1/4	164,409	1 1/4	180,707	1 1/4	197,005	1 1/4	213,253	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	164,749	1 1/2	181,046	1 1/2	197,344	1 1/2	213,591	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	165,088	3/4	181,386	3/4	197,684	3/4	213,928	3/4		3/4		3/4		3/4		3/4		3/4	
2	165,428	2	181,726	2	198,023	2	214,266	2		2		2		2		2		2	
2 1/4	165,767	2 1/4	182,065	2 1/4	198,363	2 1/4	214,604	2 1/4		2 1/4		2 1/4		2 1/4		2 1/4		2 1/4	
1/2	166,107	1/2	182,405	1/2	198,702	1/2	214,941	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	166,446	3/4	182,744	3/4	199,042	3/4	215,279	3/4		3/4		3/4		3/4		3/4		3/4	
3	166,786	3	183,084	3	199,381	3	215,616	3		3		3		3		3		3	
1 1/4	167,125	1 1/4	183,423	1 1/4	199,721	1 1/4	215,954	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	167,465	1 1/2	183,763	1 1/2	200,061	1 1/2	216,291	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	167,805	3/4	184,102	3/4	200,400	3/4	216,629	3/4		3/4		3/4		3/4		3/4		3/4	
4	168,144	4	184,442	4	200,740	4	216,967	4		4		4		4		4		4	
1 1/4	168,484	1 1/4	184,781	1 1/4	201,079	1 1/4	217,304	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	168,823	1 1/2	185,121	1 1/2	201,419	1 1/2	217,642	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	169,163	3/4	185,460	3/4	201,758	3/4	217,979	3/4		3/4		3/4		3/4		3/4		3/4	
5	169,502	5	185,800	5	202,098	5	218,317	5		5		5		5		5		5	
1 1/4	169,842	1 1/4	186,140	1 1/4	202,437	1 1/4	218,654	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	170,181	1 1/2	186,479	1 1/2	202,777	1 1/2	218,992	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	170,521	3/4	186,819	3/4	203,116	3/4	219,330	3/4		3/4		3/4		3/4		3/4		3/4	
6	170,860	6	187,158	6	203,456	6	219,667	6		6		6		6		6		6	
1 1/4	171,200	1 1/4	187,498	1 1/4	203,795	1 1/4	220,005	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	171,539	1 1/2	187,837	1 1/2	204,135	1 1/2	220,342	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	171,879	3/4	188,177	3/4	204,474	3/4	220,680	3/4		3/4		3/4		3/4		3/4		3/4	
7	172,219	7	188,516	7	204,814	7	221,017	7		7		7		7		7		7	
1 1/4	172,558	1 1/4	188,856	1 1/4	205,152	1 1/4	221,351	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	172,898	1 1/2	189,195	1 1/2	205,489	1 1/2	221,685	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	173,237	3/4	189,535	3/4	205,827	3/4	222,019	3/4		3/4		3/4		3/4		3/4		3/4	
8	173,577	8	189,874	8	206,164	8	222,353	8		8		8		8		8		8	
1 1/4	173,916	1 1/4	190,214	1 1/4	206,502	1 1/4	222,670	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	174,256	1 1/2	190,554	1 1/2	206,839	1 1/2	222,986	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	174,595	3/4	190,893	3/4	207,177	3/4	223,301	3/4		3/4		3/4		3/4		3/4		3/4	
9	174,935	9	191,233	9	207,515	9	223,620	9		9		9		9		9		9	
1 1/4	175,274	1 1/4	191,572	1 1/4	207,852	1 1/4	223,976	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	175,614	1 1/2	191,912	1 1/2	208,190	1 1/2	224,133	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	175,953	3/4	192,251	3/4	208,527	3/4	224,390	3/4		3/4		3/4		3/4		3/4		3/4	
10	176,293	10	192,591	10	208,866	10		10		10		10		10		10		10	
1 1/4	176,633	1 1/4	192,930	1 1/4	209,202	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	176,972	1 1/2	193,270	1 1/2	209,540	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	177,312	3/4	193,609	3/4	209,878	3/4		3/4		3/4		3/4		3/4		3/4		3/4	
11	177,651	11	193,949	11	210,215	11		11		11		11		11		11		11	
1 1/4	177,991	1 1/4	194,288	1 1/4	210,553	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	178,330	1 1/2	194,628	1 1/2	210,890	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	178,670	3/4	194,967	3/4	211,228	3/4		3/4		3/4		3/4		3/4		3/4		3/4	

STRAPPED: 07/24/2013 CL - SW
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PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

PRECISION MEASUREMENT
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BARGE "CCL 409"

3 PORT INNAGE TABLE

GAUGE HEIGHT 14'-11 1/4"

CAPACITIES GIVEN IN WHOLE GALLONS

0 FT.		1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.		7 FT.		8 FT.		9 FT.	
IN	OUT	IN	OUT	IN	OUT	IN	OUT												
0	736	0	15,491	0	30,260	0	45,212	0	60,363	0	75,609	0	90,627	0	105,785	0	120,943	0	136,086
1/4	963	1/4	15,807	1/4	30,564	1/4	45,527	1/4	60,679	1/4	75,821	1/4	90,843	1/4	106,101	1/4	121,259	1/4	136,402
1/2	1,189	1/2	16,123	1/2	30,868	1/2	45,843	1/2	60,994	1/2	78,136	1/2	91,258	1/2	106,417	1/2	121,674	1/2	137,716
3/4	1,415	3/4	16,439	3/4	31,171	3/4	46,159	3/4	61,310	3/4	76,451	3/4	91,576	3/4	106,733	3/4	121,890	3/4	137,033
1	1,640	1	16,755	1	31,475	1	46,474	1	61,626	1	76,785	1	91,890	1	107,048	1	122,205	1	137,349
1 1/4	1,945	1 1/4	17,070	1 1/4	31,779	1 1/4	46,790	1 1/4	61,941	1 1/4	77,080	1 1/4	92,206	1 1/4	107,364	1 1/4	122,520	1 1/4	137,665
1 1/2	2,249	1 1/2	17,386	1 1/2	32,083	1 1/2	47,105	1 1/2	62,257	1 1/2	77,396	1 1/2	92,522	1 1/2	107,680	1 1/2	122,835	1 1/2	137,991
3/4	2,554	3/4	17,702	3/4	32,387	3/4	47,421	3/4	62,573	3/4	77,710	3/4	92,838	3/4	107,995	3/4	123,151	3/4	138,296
2	2,858	2	18,018	2	32,691	2	47,737	2	62,888	2	78,025	2	93,154	2	108,311	2	123,467	2	138,612
1 1/4	3,174	1 1/4	18,334	1 1/4	32,995	1 1/4	48,053	1 1/4	63,204	1 1/4	78,339	1 1/4	93,469	1 1/4	108,627	1 1/4	123,782	1 1/4	138,928
1 1/2	3,490	1 1/2	18,650	1 1/2	33,298	1 1/2	48,368	1 1/2	63,520	1 1/2	78,654	1 1/2	93,785	1 1/2	108,943	1 1/2	124,098	1 1/2	139,244
3/4	3,806	3/4	18,965	3/4	33,602	3/4	48,684	3/4	63,835	3/4	78,969	3/4	94,101	3/4	109,259	3/4	124,413	3/4	139,559
3	4,122	3	19,281	3	33,906	3	49,000	3	64,151	3	79,284	3	94,417	3	109,575	3	124,729	3	139,875
1 1/4	4,437	1 1/4	19,597	1 1/4	34,209	1 1/4	49,315	1 1/4	64,466	1 1/4	79,599	1 1/4	94,733	1 1/4	109,890	1 1/4	125,044	1 1/4	140,191
1 1/2	4,753	1 1/2	19,913	1 1/2	34,513	1 1/2	49,631	1 1/2	64,782	1 1/2	79,914	1 1/2	95,048	1 1/2	110,206	1 1/2	125,360	1 1/2	140,507
3/4	5,069	3/4	20,229	3/4	34,816	3/4	49,947	3/4	65,098	3/4	80,228	3/4	95,364	3/4	110,522	3/4	125,675	3/4	140,822
4	5,385	4	20,545	4	35,120	4	50,262	4	65,413	4	80,543	4	95,680	4	110,838	4	125,991	4	141,138
1 1/4	5,701	1 1/4	20,849	1 1/4	35,435	1 1/4	50,578	1 1/4	65,729	1 1/4	80,858	1 1/4	95,996	1 1/4	111,154	1 1/4	126,306	1 1/4	141,454
1 1/2	6,017	1 1/2	21,153	1 1/2	35,751	1 1/2	50,893	1 1/2	66,045	1 1/2	81,173	1 1/2	96,311	1 1/2	111,469	1 1/2	126,622	1 1/2	141,770
3/4	6,332	3/4	21,457	3/4	36,066	3/4	51,209	3/4	66,359	3/4	81,488	3/4	96,627	3/4	111,785	3/4	126,937	3/4	142,085
5	6,648	5	21,761	5	36,381	5	51,525	5	66,676	5	81,803	5	96,943	5	112,101	5	127,253	5	142,401
1 1/4	6,964	1 1/4	22,064	1 1/4	36,695	1 1/4	51,840	1 1/4	66,992	1 1/4	82,117	1 1/4	97,259	1 1/4	112,417	1 1/4	127,568	1 1/4	142,689
1 1/2	7,280	1 1/2	22,368	1 1/2	37,012	1 1/2	52,156	1 1/2	67,307	1 1/2	82,432	1 1/2	97,575	1 1/2	112,733	1 1/2	127,884	1 1/2	142,937
3/4	7,596	3/4	22,671	3/4	37,327	3/4	52,472	3/4	67,623	3/4	82,747	3/4	97,890	3/4	113,048	3/4	128,199	3/4	143,205
6	7,911	6	22,975	6	37,642	6	52,787	6	67,939	6	83,062	6	98,206	6	113,364	6	128,515	6	143,472
1 1/4	8,227	1 1/4	23,279	1 1/4	37,957	1 1/4	53,103	1 1/4	68,254	1 1/4	83,377	1 1/4	98,522	1 1/4	113,680	1 1/4	128,830	1 1/4	143,740
1 1/2	8,543	1 1/2	23,582	1 1/2	38,273	1 1/2	53,419	1 1/2	68,570	1 1/2	83,691	1 1/2	98,838	1 1/2	113,996	1 1/2	129,146	1 1/2	144,008
3/4	8,859	3/4	23,886	3/4	38,588	3/4	53,734	3/4	68,886	3/4	84,006	3/4	99,154	3/4	114,311	3/4	129,461	3/4	144,276
7	9,175	7	24,190	7	38,903	7	54,050	7	69,201	7	84,321	7	99,469	7	114,627	7	129,777	7	144,543
1 1/4	9,491	1 1/4	24,493	1 1/4	39,218	1 1/4	54,366	1 1/4	69,517	1 1/4	84,636	1 1/4	99,785	1 1/4	114,943	1 1/4	130,092	1 1/4	144,811
1 1/2	9,806	1 1/2	24,797	1 1/2	39,534	1 1/2	54,681	1 1/2	69,833	1 1/2	84,951	1 1/2	100,101	1 1/2	115,259	1 1/2	130,408	1 1/2	145,079
3/4	10,122	3/4	25,100	3/4	39,849	3/4	54,997	3/4	70,148	3/4	85,266	3/4	100,417	3/4	115,575	3/4	130,723	3/4	145,347
8	10,438	8	25,404	8	40,164	8	55,313	8	70,464	8	85,580	8	100,733	8	115,890	8	131,039	8	145,614
1 1/4	10,754	1 1/4	25,707	1 1/4	40,480	1 1/4	55,628	1 1/4	70,779	1 1/4	85,895	1 1/4	101,048	1 1/4	116,206	1 1/4	131,354	1 1/4	145,882
1 1/2	11,070	1 1/2	26,011	1 1/2	40,795	1 1/2	55,944	1 1/2	71,095	1 1/2	86,210	1 1/2	101,364	1 1/2	116,522	1 1/2	131,669	1 1/2	146,150
3/4	11,386	3/4	26,314	3/4	41,110	3/4	56,260	3/4	71,411	3/4	86,525	3/4	101,680	3/4	116,838	3/4	131,985	3/4	146,418
9	11,701	9	26,618	9	41,425	9	56,575	9	71,726	9	86,840	9	101,995	9	117,154	9	132,300	9	146,686
1 1/4	12,017	1 1/4	26,921	1 1/4	41,741	1 1/4	56,891	1 1/4	72,042	1 1/4	87,155	1 1/4	102,311	1 1/4	117,469	1 1/4	132,616	1 1/4	146,953
1 1/2	12,333	1 1/2	27,225	1 1/2	42,056	1 1/2	57,206	1 1/2	72,357	1 1/2	87,470	1 1/2	102,627	1 1/2	117,785	1 1/2	132,931	1 1/2	147,221
3/4	12,649	3/4	27,528	3/4	42,371	3/4	57,522	3/4	72,672	3/4	87,786	3/4	102,943	3/4	118,101	3/4	133,247	3/4	147,489
10	12,965	10	27,831	10	42,687	10	57,838	10	72,987	10	88,101	10	103,259	10	118,417	10	133,562	10	147,757
1 1/4	13,281	1 1/4	28,135	1 1/4	43,002	1 1/4	58,153	1 1/4	73,302	1 1/4	88,417	1 1/4	103,575	1 1/4	118,733	1 1/4	133,878	1 1/4	148,024
1 1/2	13,596	1 1/2	28,439	1 1/2	43,318	1 1/2	58,469	1 1/2	73,617	1 1/2	88,733	1 1/2	103,890	1 1/2	119,048	1 1/2	134,193	1 1/2	148,292
3/4	13,912	3/4	28,742	3/4	43,634	3/4	58,785	3/4	73,932	3/4	89,048	3/4	104,206	3/4	119,364	3/4	134,509	3/4	148,560
11	14,228	11	29,046	11	43,949	11	59,100	11	74,247	11	89,364	11	104,522	11	119,680	11	134,824	11	148,828
1 1/4	14,544	1 1/4	29,350	1 1/4	44,265	1 1/4	59,416	1 1/4	74,562	1 1/4	89,680	1 1/4	104,838	1 1/4	119,995	1 1/4	135,140	1 1/4	149,095
1 1/2	14,860	1 1/2	29,653	1 1/2	44,580	1 1/2	59,732	1 1/2	74,876	1 1/2	89,996	1 1/2	105,154	1 1/2	120,311	1 1/2	135,455	1 1/2	149,363
3/4	15,176	3/4	29,957	3/4	44,896	3/4	60,047	3/4	75,191	3/4	90,311	3/4	105,469	3/4	120,627	3/4	135,771	3/4	149,631

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

PRECISION MEASUREMENT
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BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.
CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.
CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.
CAPACITY TABLE ONLY APPLIES TO INNAGE GAUGES TAKEN TO TOP OF 2" DIAMETER PIPE.
GAUGE POINT: (2" PIPE) LOCATED 12'-06" OFF CENTERLINE AND 50'-00" FORWARD OF AFT BULKHEAD.



BARGE "CCL 409"

3 PORT INNAGE TABLE

GAUGE HEIGHT 14'-11 1/4"

CAPACITIES GIVEN IN WHOLE GALLONS

IN	10 FT.	IN	11 FT.	IN	12 FT.	IN	13 FT.	IN	14 FT.	IN	15 FT.	IN	16 FT.	IN	17 FT.	IN	18 FT.	IN	19 FT.
0	149,899	0	162,752	0	175,605	0	188,427	0		0		0		0		0		0	
1/4	160,167	1/4	163,020	1/4	175,873	1/4	188,693	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	160,434	1/2	163,287	1/2	176,140	1/2	188,960	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	160,702	3/4	163,555	3/4	176,408	3/4	189,226	3/4		3/4		3/4		3/4		3/4		3/4	
1	150,970	1	163,823	1	176,676	1	189,492	1		1		1		1		1		1	
1 1/4	151,238	1 1/4	164,091	1 1/4	176,944	1 1/4	189,758	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	151,505	1 1/2	164,358	1 1/2	177,211	1 1/2	190,025	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	151,773	3/4	164,626	3/4	177,479	3/4	190,291	3/4		3/4		3/4		3/4		3/4		3/4	
2	162,041	2	164,894	2	177,747	2	190,557	2		2		2		2		2		2	
1 1/4	152,309	1 1/4	165,162	1 1/4	178,015	1 1/4	190,823	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	152,576	1 1/2	165,429	1 1/2	178,283	1 1/2	191,090	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	152,844	3/4	165,697	3/4	178,550	3/4	191,358	3/4		3/4		3/4		3/4		3/4		3/4	
3	153,112	3	165,965	3	178,818	3	191,622	3		3		3		3		3		3	
1 1/4	163,380	1 1/4	166,233	1 1/4	179,086	1 1/4	191,888	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	153,648	1 1/2	166,501	1 1/2	179,354	1 1/2	192,154	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	153,915	3/4	166,768	3/4	179,621	3/4	192,421	3/4		3/4		3/4		3/4		3/4		3/4	
4	154,183	4	167,036	4	179,889	4	192,687	4		4		4		4		4		4	
1 1/4	154,451	1 1/4	167,304	1 1/4	180,157	1 1/4	192,953	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	154,719	1 1/2	167,572	1 1/2	180,425	1 1/2	193,219	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	154,986	3/4	167,839	3/4	180,692	3/4	193,486	3/4		3/4		3/4		3/4		3/4		3/4	
5	155,254	5	168,107	5	180,960	5	193,752	5		5		5		5		5		5	
1 1/4	155,522	1 1/4	168,375	1 1/4	181,228	1 1/4	194,018	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	155,790	1 1/2	168,643	1 1/2	181,496	1 1/2	194,284	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	156,058	3/4	168,911	3/4	181,764	3/4	194,551	3/4		3/4		3/4		3/4		3/4		3/4	
6	156,325	6	169,178	6	182,031	6	194,817	6		6		6		6		6		6	
1 1/4	156,593	1 1/4	169,446	1 1/4	182,299	1 1/4	195,083	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	156,861	1 1/2	169,714	1 1/2	182,567	1 1/2	195,349	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	157,129	3/4	169,982	3/4	182,835	3/4	195,616	3/4		3/4		3/4		3/4		3/4		3/4	
7	157,396	7	170,249	7	183,102	7	195,882	7		7		7		7		7		7	
1 1/4	157,664	1 1/4	170,517	1 1/4	183,369	1 1/4	196,149	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	157,932	1 1/2	170,785	1 1/2	183,635	1 1/2	196,503	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	158,200	3/4	171,053	3/4	183,901	3/4	196,814	3/4		3/4		3/4		3/4		3/4		3/4	
8	158,467	8	171,320	8	184,167	8	197,124	8		8		8		8		8		8	
1 1/4	158,735	1 1/4	171,588	1 1/4	184,434	1 1/4	197,419	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	159,003	1 1/2	171,856	1 1/2	184,700	1 1/2	197,713	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	159,271	3/4	172,124	3/4	184,966	3/4	198,008	3/4		3/4		3/4		3/4		3/4		3/4	
9	159,539	9	172,392	9	185,232	9	198,302	9		9		9		9		9		9	
1 1/4	159,806	1 1/4	172,659	1 1/4	185,499	1 1/4	198,541	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	160,074	1 1/2	172,927	1 1/2	185,765	1 1/2	198,780	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	160,342	3/4	173,195	3/4	186,031	3/4	199,019	3/4		3/4		3/4		3/4		3/4		3/4	
10	160,610	10	173,463	10	186,297	10		10		10		10		10		10		10	
1 1/4	160,877	1 1/4	173,730	1 1/4	186,563	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	161,145	1 1/2	173,998	1 1/2	186,830	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	161,413	3/4	174,266	3/4	187,096	3/4		3/4		3/4		3/4		3/4		3/4		3/4	
11	161,681	11	174,534	11	187,362	11		11		11		11		11		11		11	
1 1/4	161,948	1 1/4	174,801	1 1/4	187,628	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	162,216	1 1/2	175,069	1 1/2	187,895	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3/4	162,484	3/4	175,337	3/4	188,161	3/4		3/4		3/4		3/4		3/4		3/4		3/4	

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

PRECISION MEASUREMENT
& ANALYSIS, INC.
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BARGE "CCL 409"

3 STBD
INNAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-10 3/4"

IN	0 FT.	IN	1 FT.	IN	2 FT.	IN	3 FT.	IN	4 FT.	IN	5 FT.	IN	6 FT.	IN	7 FT.	IN	8 FT.	IN	9 FT.
0	738	0	15,473	0	30,258	0	45,282	0	60,415	0	75,520	0	90,538	0	105,667	0	120,803	0	135,926
1/4	964	1/4	15,789	1/4	30,603	1/4	45,597	1/4	60,731	1/4	76,832	1/4	90,853	1/4	105,982	1/4	121,116	1/4	136,242
1/2	1,189	1/2	16,104	1/2	30,909	1/2	45,812	1/2	61,047	1/2	76,144	1/2	91,169	1/2	106,297	1/2	121,433	1/2	136,557
3/4	1,415	3/4	16,420	3/4	31,214	3/4	46,227	3/4	61,362	3/4	76,456	3/4	91,484	3/4	106,612	3/4	121,748	3/4	136,872
1	1,640	1	16,735	1	31,520	1	46,543	1	61,677	1	76,768	1	91,800	1	106,927	1	122,064	1	137,188
1 1/4	1,945	1 1/4	17,050	1 1/4	31,826	1 1/4	46,858	1 1/4	61,993	1 1/4	77,081	1 1/4	92,115	1 1/4	107,242	1 1/4	122,379	1 1/4	137,503
1 1/2	2,249	1 1/2	17,366	1 1/2	32,132	1 1/2	47,173	1 1/2	62,308	1 1/2	77,393	1 1/2	92,431	1 1/2	107,557	1 1/2	122,694	1 1/2	137,819
3/4	2,553	3/4	17,681	3/4	32,438	3/4	47,489	3/4	62,623	3/4	77,705	3/4	92,746	3/4	107,873	3/4	123,009	3/4	138,134
2	2,857	2	17,997	2	32,744	2	47,804	2	62,938	2	78,017	2	93,061	2	108,188	2	123,324	2	138,449
1 1/4	3,172	1 1/4	18,312	1 1/4	33,060	1 1/4	48,119	1 1/4	63,254	1 1/4	78,329	1 1/4	93,377	1 1/4	108,503	1 1/4	123,639	1 1/4	138,766
1 1/2	3,488	1 1/2	18,628	1 1/2	33,356	1 1/2	48,436	1 1/2	63,568	1 1/2	78,642	1 1/2	93,592	1 1/2	108,819	1 1/2	123,954	1 1/2	139,080
3/4	3,803	3/4	18,943	3/4	33,662	3/4	48,750	3/4	63,884	3/4	78,954	3/4	94,008	3/4	109,134	3/4	124,289	3/4	139,395
3	4,119	3	19,258	3	33,968	3	49,065	3	64,200	3	79,288	3	94,323	3	109,450	3	124,584	3	139,711
1 1/4	4,434	1 1/4	19,574	1 1/4	34,274	1 1/4	49,380	1 1/4	64,516	1 1/4	79,578	1 1/4	94,639	1 1/4	109,765	1 1/4	124,899	1 1/4	140,026
1 1/2	4,749	1 1/2	19,889	1 1/2	34,580	1 1/2	49,696	1 1/2	64,830	1 1/2	79,890	1 1/2	94,954	1 1/2	110,080	1 1/2	125,214	1 1/2	140,341
3/4	5,065	3/4	20,206	3/4	34,886	3/4	50,011	3/4	65,146	3/4	80,203	3/4	95,289	3/4	110,396	3/4	125,529	3/4	140,657
4	5,380	4	20,520	4	35,192	4	50,326	4	65,461	4	80,515	4	95,585	4	110,711	4	125,844	4	140,972
1 1/4	5,698	1 1/4	20,826	1 1/4	35,507	1 1/4	50,642	1 1/4	65,776	1 1/4	80,827	1 1/4	95,900	1 1/4	111,026	1 1/4	126,159	1 1/4	141,287
1 1/2	6,011	1 1/2	21,132	1 1/2	35,822	1 1/2	50,957	1 1/2	66,091	1 1/2	81,139	1 1/2	96,216	1 1/2	111,342	1 1/2	126,475	1 1/2	141,603
3/4	6,326	3/4	21,438	3/4	36,138	3/4	51,272	3/4	66,407	3/4	81,451	3/4	96,531	3/4	111,657	3/4	126,790	3/4	141,918
5	6,642	5	21,744	5	36,453	5	51,588	5	66,722	5	81,764	5	96,847	5	111,973	5	127,105	5	142,233
1 1/4	6,957	1 1/4	22,060	1 1/4	36,768	1 1/4	51,903	1 1/4	67,037	1 1/4	82,076	1 1/4	97,162	1 1/4	112,288	1 1/4	127,420	1 1/4	142,501
1 1/2	7,273	1 1/2	22,355	1 1/2	37,084	1 1/2	52,218	1 1/2	67,353	1 1/2	82,388	1 1/2	97,477	1 1/2	112,603	1 1/2	127,735	1 1/2	142,769
3/4	7,588	3/4	22,661	3/4	37,399	3/4	52,533	3/4	67,668	3/4	82,700	3/4	97,792	3/4	112,919	3/4	128,050	3/4	143,037
6	7,904	6	22,966	6	37,714	6	52,849	6	67,983	6	83,013	6	98,107	6	113,234	6	128,365	6	143,306
1 1/4	8,219	1 1/4	23,272	1 1/4	38,030	1 1/4	53,164	1 1/4	68,299	1 1/4	83,325	1 1/4	98,422	1 1/4	113,550	1 1/4	128,680	1 1/4	143,572
1 1/2	8,534	1 1/2	23,577	1 1/2	38,345	1 1/2	53,479	1 1/2	68,614	1 1/2	83,637	1 1/2	98,737	1 1/2	113,865	1 1/2	128,995	1 1/2	143,840
3/4	8,850	3/4	23,883	3/4	38,660	3/4	53,795	3/4	68,929	3/4	83,949	3/4	99,052	3/4	114,180	3/4	129,310	3/4	144,108
7	9,165	7	24,188	7	38,975	7	54,110	7	69,245	7	84,261	7	99,367	7	114,496	7	129,625	7	144,376
1 1/4	9,481	1 1/4	24,494	1 1/4	39,291	1 1/4	54,425	1 1/4	69,560	1 1/4	84,574	1 1/4	99,682	1 1/4	114,811	1 1/4	129,940	1 1/4	144,644
1 1/2	9,796	1 1/2	24,799	1 1/2	39,606	1 1/2	54,741	1 1/2	69,875	1 1/2	84,886	1 1/2	99,997	1 1/2	115,126	1 1/2	130,255	1 1/2	144,912
3/4	10,111	3/4	25,105	3/4	39,921	3/4	55,056	3/4	70,190	3/4	85,198	3/4	100,312	3/4	115,442	3/4	130,571	3/4	145,179
8	10,427	8	25,411	8	40,237	8	55,371	8	70,505	8	85,510	8	100,627	8	115,757	8	130,886	8	145,447
1 1/4	10,742	1 1/4	25,716	1 1/4	40,552	1 1/4	55,687	1 1/4	70,821	1 1/4	85,822	1 1/4	100,942	1 1/4	116,073	1 1/4	131,201	1 1/4	145,715
1 1/2	11,058	1 1/2	26,021	1 1/2	40,867	1 1/2	56,002	1 1/2	71,136	1 1/2	86,135	1 1/2	101,257	1 1/2	116,388	1 1/2	131,516	1 1/2	145,983
3/4	11,373	3/4	26,327	3/4	41,183	3/4	56,317	3/4	71,452	3/4	86,447	3/4	101,572	3/4	116,703	3/4	131,831	3/4	146,251
9	11,688	9	26,632	9	41,498	9	56,632	9	71,767	9	86,759	9	101,887	9	117,019	9	132,146	9	146,519
1 1/4	12,004	1 1/4	26,937	1 1/4	41,813	1 1/4	56,948	1 1/4	72,081	1 1/4	87,073	1 1/4	102,202	1 1/4	117,334	1 1/4	132,461	1 1/4	146,786
1 1/2	12,319	1 1/2	27,243	1 1/2	42,128	1 1/2	57,263	1 1/2	72,394	1 1/2	87,387	1 1/2	102,517	1 1/2	117,649	1 1/2	132,776	1 1/2	147,054
3/4	12,635	3/4	27,548	3/4	42,444	3/4	57,578	3/4	72,708	3/4	87,701	3/4	102,832	3/4	117,965	3/4	133,091	3/4	147,322
10	12,950	10	27,853	10	42,759	10	57,894	10	73,022	10	88,014	10	103,147	10	118,280	10	133,406	10	147,590
1 1/4	13,266	1 1/4	28,159	1 1/4	43,074	1 1/4	58,209	1 1/4	73,334	1 1/4	88,330	1 1/4	103,462	1 1/4	118,596	1 1/4	133,721	1 1/4	147,858
1 1/2	13,581	1 1/2	28,465	1 1/2	43,390	1 1/2	58,524	1 1/2	73,646	1 1/2	88,645	1 1/2	103,777	1 1/2	118,911	1 1/2	134,036	1 1/2	148,126
3/4	13,896	3/4	28,770	3/4	43,705	3/4	58,840	3/4	73,959	3/4	88,961	3/4	104,092	3/4	119,226	3/4	134,351	3/4	148,393
11	14,212	11	29,076	11	44,020	11	59,155	11	74,271	11	89,276	11	104,407	11	119,542	11	134,666	11	148,661
1 1/4	14,527	1 1/4	29,381	1 1/4	44,336	1 1/4	59,470	1 1/4	74,583	1 1/4	89,592	1 1/4	104,722	1 1/4	119,857	1 1/4	134,981	1 1/4	148,929
1 1/2	14,843	1 1/2	29,687	1 1/2	44,651	1 1/2	59,785	1 1/2	74,895	1 1/2	89,907	1 1/2	105,037	1 1/2	120,172	1 1/2	135,296	1 1/2	149,197
3/4	15,158	3/4	29,992	3/4	44,966	3/4	60,101	3/4	75,207	3/4	90,222	3/4	105,352	3/4	120,486	3/4	135,611	3/4	149,466

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.
CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.
CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.
CAPACITY TABLE ONLY APPLIES TO INNAGE GAUGES TAKEN TO TOP OF 2" DIAMETER PIPE.
GAUGE POINT: (2" PIPE) LOCATED 12'-05" OFF CENTERLINE AND 58'-00" FORWARD OF AFT BULKHEAD.

PRECISION MEASUREMENT
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Pearland, Texas 77588
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BARGE "CCL 409"

3 STBD INNAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-10 3/4"

IN	10 FT.	IN	11 FT.	IN	12 FT.	IN	13 FT.	IN	14 FT.	IN	15 FT.	IN	16 FT.	IN	17 FT.	IN	18 FT.	IN	19 FT.
0	149,732	0	162,588	0	175,444	0	188,299	0		0		0		0		0		0	
1/4	150,000	1/4	162,856	1/4	175,712	1/4	188,536	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	150,268	1/2	163,124	1/2	175,980	1/2	188,802	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	150,536	3/4	163,392	3/4	176,248	3/4	189,068	3/4		3/4		3/4		3/4		3/4		3/4	
1	150,804	1	163,660	1	176,515	1	189,335	1		1		1		1		1		1	
1 1/4	151,072	1 1/4	163,927	1 1/4	176,783	1 1/4	189,601	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	151,339	1 1/2	164,195	1 1/2	177,051	1 1/2	189,867	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
2 1/4	151,607	2 1/4	164,463	2 1/4	177,319	2 1/4	190,133	2 1/4		2 1/4		2 1/4		2 1/4		2 1/4		2 1/4	
2	151,875	2	164,731	2	177,587	2	190,400	2		2		2		2		2		2	
1 3/4	152,143	1 3/4	164,999	1 3/4	177,855	1 3/4	190,666	1 3/4		1 3/4		1 3/4		1 3/4		1 3/4		1 3/4	
1 1/2	152,411	1 1/2	165,267	1 1/2	178,122	1 1/2	190,932	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	152,679	3 1/4	165,534	3 1/4	178,390	3 1/4	191,199	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
3	152,946	3	165,802	3	178,658	3	191,465	3		3		3		3		3		3	
1 1/4	153,214	1 1/4	166,070	1 1/4	178,926	1 1/4	191,731	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	153,482	1 1/2	166,338	1 1/2	179,194	1 1/2	191,997	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	153,750	3 1/4	166,606	3 1/4	179,462	3 1/4	192,264	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
4	154,018	4	166,874	4	179,729	4	192,530	4		4		4		4		4		4	
1 3/4	154,286	1 3/4	167,141	1 3/4	179,997	1 3/4	192,796	1 3/4		1 3/4		1 3/4		1 3/4		1 3/4		1 3/4	
1 1/2	154,553	1 1/2	167,409	1 1/2	180,265	1 1/2	193,063	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	154,821	3 1/4	167,677	3 1/4	180,533	3 1/4	193,329	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
5	155,089	5	167,945	5	180,801	5	193,595	5		5		5		5		5		5	
1 1/4	155,357	1 1/4	168,213	1 1/4	181,069	1 1/4	193,862	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	155,625	1 1/2	168,481	1 1/2	181,336	1 1/2	194,128	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	155,893	3 1/4	168,748	3 1/4	181,604	3 1/4	194,394	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
6	156,160	6	169,016	6	181,872	6	194,660	6		6		6		6		6		6	
1 1/4	156,428	1 1/4	169,284	1 1/4	182,140	1 1/4	194,927	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	156,696	1 1/2	169,552	1 1/2	182,408	1 1/2	195,193	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	156,964	3 1/4	169,820	3 1/4	182,676	3 1/4	195,459	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
7	157,232	7	170,088	7	182,943	7	195,726	7		7		7		7		7		7	
1 3/4	157,500	1 3/4	170,355	1 3/4	183,210	1 3/4	196,036	1 3/4		1 3/4		1 3/4		1 3/4		1 3/4		1 3/4	
1 1/2	157,767	1 1/2	170,623	1 1/2	183,476	1 1/2	196,347	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	158,035	3 1/4	170,891	3 1/4	183,742	3 1/4	196,658	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
8	158,303	8	171,159	8	184,009	8	196,969	8		8		8		8		8		8	
1 1/4	158,571	1 1/4	171,427	1 1/4	184,275	1 1/4	197,263	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	158,839	1 1/2	171,696	1 1/2	184,541	1 1/2	197,558	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	159,107	3 1/4	171,962	3 1/4	184,807	3 1/4	197,852	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
9	159,374	9	172,230	9	185,074	9	198,147	9		9		9		9		9		9	
1 1/4	159,642	1 1/4	172,498	1 1/4	185,340	1 1/4	198,385	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	159,910	1 1/2	172,766	1 1/2	185,606	1 1/2	198,624	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	160,178	3 1/4	173,034	3 1/4	185,873	3 1/4	198,863	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
10	160,446	10	173,302	10	186,139	10		10		10		10		10		10		10	
1 1/4	160,714	1 1/4	173,569	1 1/4	186,405	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	160,981	1 1/2	173,837	1 1/2	186,672	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	161,249	3 1/4	174,105	3 1/4	186,938	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	
11	161,517	11	174,373	11	187,204	11		11		11		11		11		11		11	
1 1/4	161,785	1 1/4	174,641	1 1/4	187,470	1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4		1 1/4	
1 1/2	162,053	1 1/2	174,909	1 1/2	187,737	1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2	
3 1/4	162,320	3 1/4	175,178	3 1/4	188,003	3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4		3 1/4	

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

PRECISION MEASUREMENT
& ANALYSIS, INC.
P.O. Box 2692
Pearland, Texas 77588
<http://www.pmacorp.net>

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BARGE "CCL 409"

ULLAGE TRIM TABLE

	1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.	
	<u>BOW</u>	<u>STERN</u>										
1 PORT	- 00-1/4	00-1/4	- 00-3/8	00-3/8	- 00-5/8	00-5/8	- 00-7/8	00-7/8	- 01-0/8	01-0/8	- 01-1/4	01-1/4
1 STBD	- 00-1/4	00-1/4	- 00-3/8	00-3/8	- 00-5/8	00-5/8	- 00-7/8	00-7/8	- 01-0/8	01-0/8	- 01-1/4	01-1/4
2 PORT	00-1/4	- 00-1/4	00-3/8	- 00-3/8	00-5/8	- 00-5/8	00-7/8	- 00-7/8	01-0/8	- 01-0/8	01-1/4	- 01-1/4
2 STBD	00-1/4	- 00-1/4	00-3/8	- 00-3/8	00-5/8	- 00-5/8	00-7/8	- 00-7/8	01-0/8	- 01-0/8	01-1/4	- 01-1/4
3 PORT	- 00-3/4	00-3/4	- 01-5/8	01-5/8	- 02-3/8	02-3/8	- 03-1/4	03-1/4	- 04-0/8	04-0/8	- 04-7/8	04-7/8
3 STBD	- 00-3/4	00-3/4	- 01-5/8	01-5/8	- 02-3/8	02-3/8	- 03-1/4	03-1/4	- 04-0/8	04-0/8	- 04-7/8	04-7/8

(ALL MEASUREMENTS ABOVE ARE IN INCHES)

EXAMPLE FOR ABOVE TRIM CORRECTIONS:

FWD. DRAFT = 2'-00"
 AFT DRAFT = 4'-00"
 DIFF. = 2'-00" (DOWN BY STERN)

THE CORRECTION FOR 2'-00" TRIM DOWN BY STERN FOR 1 PORT IS 00-3/8"
 FOR A MEASURED ULLAGE GAUGE OF 4'-00" ON 1 PORT, THE TRIM CORRECTED ULLAGE IS 4'-00 3/8"

LENGTH BETWEEN DRAFT MARKS: 231'-06"

July 24, 2013

**PRECISION MEASUREMENT
& ANALYSIS, INC.**

P.O. Box 2092
 Pearland, Texas 77588

<http://www.pmacorp.net>



BARGE "CCL 409"

ULLAGE TRIM TABLE

	7 FT.		8 FT.		9 FT.		10 FT.		11 FT.		12 FT.	
	<u>BOW</u>	<u>STERN</u>										
1 PORT	01-1/2	- 01-1/2	01-5/8	- 01-5/8	01-7/8	- 01-7/8	02-1/8	- 02-1/8	02-1/4	- 02-1/4	02-1/2	- 02-1/2
1 STBD	01-1/2	- 01-1/2	01-5/8	- 01-5/8	01-7/8	- 01-7/8	02-1/8	- 02-1/8	02-1/4	- 02-1/4	02-1/2	- 02-1/2
2 PORT	- 01-1/2	01-1/2	- 01-5/8	01-5/8	- 01-7/8	01-7/8	- 02-1/8	02-1/8	- 02-1/4	02-1/4	- 02-1/2	02-1/2
2 STBD	- 01-1/2	01-1/2	- 01-5/8	01-5/8	- 01-7/8	01-7/8	- 02-1/8	02-1/8	- 02-1/4	02-1/4	- 02-1/2	02-1/2
3 PORT	05-5/8	- 05-5/8	06-3/8	- 06-3/8	07-1/4	- 07-1/4	08-0/8	- 08-0/8	08-7/8	- 08-7/8	09-5/8	- 09-5/8
3 STBD	05-5/8	- 05-5/8	06-3/8	- 06-3/8	07-1/4	- 07-1/4	08-0/8	- 08-0/8	08-7/8	- 08-7/8	09-5/8	- 09-5/8

(ALL MEASUREMENTS ABOVE ARE IN INCHES)

EXAMPLE FOR ABOVE TRIM CORRECTIONS:

FWD. DRAFT = 2'-00"
 AFT DRAFT = 4'-00"
 DIFF. = 2'-00" (DOWN BY STERN)

THE CORRECTION FOR 2'-00" TRIM DOWN BY STERN FOR 1 PORT IS - 00-3/8"
 FOR A MEASURED ULLAGE GAUGE OF 4'-00" ON 1 PORT, THE TRIM CORRECTED ULLAGE IS 3'-11 5/8"

LENGTH BETWEEN DRAFT MARKS: 231'-06"

September 9, 2014

PRECISION MEASUREMENT
 & ANALYSIS, INC.
 P.O. Box 2092
 Pearland, Texas 77588

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BARGE "CCL 409"

1 PORT ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 1/2"

0 FT.		1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.		7 FT.		8 FT.		9 FT.			
IN		IN		IN		IN		IN		IN		IN		IN		IN		IN			
0		0	184,722	0	171,100	0	157,192	0	143,267	0	129,342	0	115,417	0	101,490	0	87,563	0	73,637		
1/4		1/4	184,502	1/4	170,811	1/4	156,902	1/4	142,977	1/4	129,052	1/4	115,127	1/4	101,200	1/4	87,273	1/4	73,347		
1/2		1/2	184,283	1/2	170,523	1/2	156,612	1/2	142,687	1/2	128,762	1/2	114,837	1/2	100,910	1/2	86,983	1/2	73,056		
3/4		3/4	184,012	3/4	170,234	3/4	156,321	3/4	142,397	3/4	128,472	3/4	114,546	3/4	100,620	3/4	86,693	3/4	72,766		
1		1	183,742	1	169,946	1	156,031	1	142,106	1	128,181	1	114,256	1	100,330	1	86,403	1	72,476		
1/4		1/4	183,471	1/4	169,658	1/4	155,741	1/4	141,816	1/4	127,891	1/4	113,966	1/4	100,039	1/4	86,113	1/4	72,186		
1/2		1/2	183,201	1/2	169,369	1/2	155,451	1/2	141,526	1/2	127,601	1/2	113,676	1/2	99,749	1/2	85,823	1/2	71,896		
3/4		3/4	182,915	3/4	169,081	3/4	155,161	3/4	141,236	3/4	127,311	3/4	113,386	3/4	99,459	3/4	85,532	3/4	71,606		
2		2	182,630	2	168,792	2	154,871	2	140,946	2	127,021	2	113,096	2	99,169	2	85,242	2	71,316		
1/4		1/4	182,345	1/4	168,504	1/4	154,581	1/4	140,656	1/4	126,731	1/4	112,806	1/4	98,879	1/4	84,952	1/4	71,025		
1/2		1/2	182,059	1/2	168,216	1/2	154,291	1/2	140,366	1/2	126,441	1/2	112,516	1/2	98,589	1/2	84,662	1/2	70,735		
3/4		3/4	181,771	3/4	167,926	3/4	154,001	3/4	140,076	3/4	126,151	3/4	112,225	3/4	98,299	3/4	84,372	3/4	70,445		
3		3	181,482	3	167,635	3	153,711	3	139,786	3	125,861	3	111,935	3	98,008	3	84,082	3	70,155		
1/4		1/4	181,194	1/4	167,345	1/4	153,420	1/4	139,495	1/4	125,571	1/4	111,645	1/4	97,718	1/4	83,792	1/4	69,865		
1/2		1/2	180,906	1/2	167,055	1/2	153,130	1/2	139,205	1/2	125,280	1/2	111,355	1/2	97,428	1/2	83,501	1/2	69,575		
3/4		3/4	180,617	3/4	166,765	3/4	152,840	3/4	138,915	3/4	124,990	3/4	111,065	3/4	97,138	3/4	83,211	3/4	69,285		
4		4	180,329	4	166,475	4	152,550	4	138,625	4	124,700	4	110,775	4	96,848	4	82,921	4	68,994		
1/4		1/4	180,040	1/4	166,185	1/4	152,260	1/4	138,335	1/4	124,410	1/4	110,485	1/4	96,558	1/4	82,631	1/4	68,704		
1/2		1/2	179,752	1/2	165,895	1/2	151,970	1/2	138,045	1/2	124,120	1/2	110,194	1/2	96,268	1/2	82,341	1/2	68,414		
3/4		3/4	179,464	3/4	165,605	3/4	151,680	3/4	137,755	3/4	123,830	3/4	109,904	3/4	95,978	3/4	82,051	3/4	68,124		
5		5	179,175	5	165,315	5	151,390	5	137,465	5	123,540	5	109,614	5	95,687	5	81,761	5	67,834		
1/4		1/4	178,887	1/4	165,024	1/4	151,100	1/4	137,175	1/4	123,250	1/4	109,324	1/4	95,397	1/4	81,471	1/4	67,544		
1/2		1/2	178,598	1/2	164,734	1/2	150,809	1/2	136,885	1/2	122,960	1/2	109,034	1/2	95,107	1/2	81,180	1/2	67,254		
3/4		3/4	178,310	3/4	164,444	3/4	150,519	3/4	136,594	3/4	122,670	3/4	108,744	3/4	94,817	3/4	80,890	3/4	66,963		
6		6	178,022	6	164,154	6	150,229	6	136,304	6	122,379	6	108,454	6	94,527	6	80,600	6	66,673		
1/4		1/4	177,733	1/4	163,864	1/4	149,939	1/4	136,014	1/4	122,089	1/4	108,163	1/4	94,237	1/4	80,310	1/4	66,383		
1/2		1/2	177,445	1/2	163,574	1/2	149,649	1/2	135,724	1/2	121,799	1/2	107,873	1/2	93,947	1/2	80,020	1/2	66,093		
3/4		3/4	177,156	3/4	163,284	3/4	149,359	3/4	135,434	3/4	121,509	3/4	107,583	3/4	93,656	3/4	79,730	3/4	65,803		
7		7	176,868	7	162,994	7	149,069	7	135,144	7	121,219	7	107,293	7	93,366	7	79,440	7	65,513		
1/4		1/4	176,580	1/4	162,704	1/4	148,779	1/4	134,854	1/4	120,929	1/4	107,003	1/4	93,076	1/4	79,149	1/4	65,223		
1/2		1/2	176,291	1/2	162,414	1/2	148,489	1/2	134,564	1/2	120,639	1/2	106,713	1/2	92,786	1/2	78,859	1/2	64,933		
3/4		3/4	176,003	3/4	162,123	3/4	148,199	3/4	134,274	3/4	120,349	3/4	106,423	3/4	92,496	3/4	78,569	3/4	64,642		
8		8	175,714	8	161,833	8	147,908	8	133,984	8	120,059	8	106,132	8	92,206	8	78,279	8	64,352		
1/4		1/4	175,426	1/4	161,543	1/4	147,618	1/4	133,693	1/4	119,769	1/4	105,842	1/4	91,916	1/4	77,989	1/4	64,062		
1/2		1/2	175,137	1/2	161,253	1/2	147,328	1/2	133,403	1/2	119,478	1/2	105,552	1/2	91,625	1/2	77,699	1/2	63,772		
3/4		3/4	174,849	3/4	160,963	3/4	147,038	3/4	133,113	3/4	119,188	3/4	105,262	3/4	91,335	3/4	77,409	3/4	63,482		
9		9	174,561	9	160,673	9	146,748	9	132,823	9	118,898	9	104,972	9	91,045	9	77,118	9	63,192		
1/4		1/4	174,272	1/4	160,383	1/4	146,458	1/4	132,533	1/4	118,608	1/4	104,682	1/4	90,755	1/4	76,828	1/4	62,902		
1/2		1/2	173,984	1/2	160,093	1/2	146,168	1/2	132,243	1/2	118,318	1/2	104,392	1/2	90,465	1/2	76,538	1/2	62,611		
3/4		3/4	173,695	3/4	159,803	3/4	145,878	3/4	131,953	3/4	118,028	3/4	104,101	3/4	90,175	3/4	76,248	3/4	62,321		
10		10	173,407	10	159,513	10	145,588	10	131,663	10	117,738	10	103,811	10	89,885	10	75,958	10	62,031		
1/4		1/4	173,119	1/4	159,222	1/4	145,298	1/4	131,373	1/4	117,448	1/4	103,521	1/4	89,594	1/4	75,668	1/4	61,741		
1/2		1/2	172,830	1/2	158,932	1/2	145,007	1/2	131,083	1/2	117,158	1/2	103,231	1/2	89,304	1/2	75,378	1/2	61,451		
3/4		3/4	172,542	3/4	158,642	3/4	144,717	3/4	130,792	3/4	116,867	3/4	102,941	3/4	89,014	3/4	75,087	3/4	61,161		
11		11	172,253	11	158,352	11	144,427	11	130,502	11	116,577	11	102,651	11	88,724	11	74,797	11	60,871		
1/4		1/4	171,965	1/4	158,062	1/4	144,137	1/4	130,212	1/4	116,287	1/4	102,361	1/4	88,434	1/4	74,507	1/4	60,580		
1/2		1/2	171,677	1/2	157,772	1/2	143,847	1/2	129,922	1/2	115,997	1/2	102,070	1/2	88,144	1/2	74,217	1/2	60,290		
3/4		3/4	184,941	3/4	171,388	3/4	157,482	3/4	143,557	3/4	129,632	3/4	115,707	3/4	101,780	3/4	87,854	3/4	73,927	3/4	60,000

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.

CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.

CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.

CAPACITY TABLE ONLY APPLIES TO ULLAGE GAUGES TAKEN TO TOP OF 2" OPENING ON "HERMETIC" VALVE.

GAUGE POINT: (HERMETIC) LOCATED 12'-06" OFF CENTERLINE AND 43'-09" FORWARD OF AFT BULKHEAD.

PRECISION MEASUREMENT
& ANALYSIS, INC.

P.O. Box 2092

Pearland, Texas 77588

<http://www.pmacorp.net>



BARGE "CCL 409"

1 PORT ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 1/2"

IN	10 FT.	IN	11 FT.	IN	12 FT.	IN	13 FT.	IN	14 FT.	IN	15 FT.	IN	16 FT.	IN	17 FT.	IN	18 FT.	IN	19 FT.
0	59,710	0	45,802	0	32,516	0	20,044	0	8,380	0		0		0		0		0	
1/4	59,420	1/4	45,516	1/4	32,249	1/4	19,792	1/4	8,146	1/4		1/4		1/4		1/4		1/4	
1/2	59,130	1/2	45,229	1/2	31,981	1/2	19,541	1/2	7,912	1/2		1/2		1/2		1/2		1/2	
3/4	58,840	3/4	44,944	3/4	31,715	3/4	19,291	3/4	7,679	3/4		3/4		3/4		3/4		3/4	
1	58,549	1	44,659	1	31,449	1	19,040	1	7,446	1		1		1		1		1	
1/4	58,259	1/4	44,374	1/4	31,184	1/4	18,790	1/4	7,213	1/4		1/4		1/4		1/4		1/4	
1/2	57,969	1/2	44,089	1/2	30,918	1/2	18,540	1/2	6,981	1/2		1/2		1/2		1/2		1/2	
3/4	57,679	3/4	43,805	3/4	30,653	3/4	18,291	3/4	6,749	3/4		3/4		3/4		3/4		3/4	
2	57,389	2	43,522	2	30,389	2	18,042	2	6,518	2		2		2		2		2	
1/4	57,099	1/4	43,238	1/4	30,124	1/4	17,793	1/4	6,286	1/4		1/4		1/4		1/4		1/4	
1/2	56,809	1/2	42,954	1/2	29,860	1/2	17,545	1/2	6,055	1/2		1/2		1/2		1/2		1/2	
3/4	56,518	3/4	42,672	3/4	29,596	3/4	17,297	3/4	5,825	3/4		3/4		3/4		3/4		3/4	
3	56,228	3	42,390	3	29,333	3	17,050	3	5,595	3		3		3		3		3	
1/4	55,938	1/4	42,108	1/4	29,069	1/4	16,803	1/4	5,365	1/4		1/4		1/4		1/4		1/4	
1/2	55,648	1/2	41,826	1/2	28,806	1/2	16,555	1/2	5,135	1/2		1/2		1/2		1/2		1/2	
3/4	55,358	3/4	41,545	3/4	28,544	3/4	16,309	3/4	4,907	3/4		3/4		3/4		3/4		3/4	
4	55,068	4	41,264	4	28,282	4	16,063	4	4,678	4		4		4		4		4	
1/4	54,778	1/4	40,984	1/4	28,020	1/4	15,818	1/4	4,450	1/4		1/4		1/4		1/4		1/4	
1/2	54,487	1/2	40,703	1/2	27,757	1/2	15,572	1/2	4,221	1/2		1/2		1/2		1/2		1/2	
3/4	54,197	3/4	40,425	3/4	27,496	3/4	15,327	3/4	3,994	3/4		3/4		3/4		3/4		3/4	
5	53,907	5	40,146	5	27,234	5	15,083	5	3,767	5		5		5		5		5	
1/4	53,617	1/4	39,868	1/4	26,972	1/4	14,838	1/4	3,540	1/4		1/4		1/4		1/4		1/4	
1/2	53,327	1/2	39,590	1/2	26,710	1/2	14,594	1/2	3,313	1/2		1/2		1/2		1/2		1/2	
3/4	53,037	3/4	39,313	3/4	26,450	3/4	14,351	3/4	3,088	3/4		3/4		3/4		3/4		3/4	
6	52,747	6	39,036	6	26,189	6	14,108	6	2,862	6		6		6		6		6	
1/4	52,456	1/4	38,760	1/4	25,929	1/4	13,865	1/4	2,636	1/4		1/4		1/4		1/4		1/4	
1/2	52,166	1/2	38,483	1/2	25,668	1/2	13,622	1/2	2,411	1/2		1/2		1/2		1/2		1/2	
3/4	51,876	3/4	38,208	3/4	25,410	3/4	13,380	3/4	2,187	3/4		3/4		3/4		3/4		3/4	
7	51,586	7	37,934	7	25,151	7	13,139	7	1,962	7		7		7		7		7	
1/4	51,296	1/4	37,659	1/4	24,892	1/4	12,897	1/4	1,738	1/4		1/4		1/4		1/4		1/4	
1/2	51,006	1/2	37,385	1/2	24,633	1/2	12,656	1/2	1,514	1/2		1/2		1/2		1/2		1/2	
3/4	50,716	3/4	37,111	3/4	24,375	3/4	12,416	3/4	1,302	3/4		3/4		3/4		3/4		3/4	
8	50,426	8	36,838	8	24,118	8	12,176	8	1,090	8		8		8		8		8	
1/4	50,135	1/4	36,565	1/4	23,860	1/4	11,935	1/4	877	1/4		1/4		1/4		1/4		1/4	
1/2	49,845	1/2	36,292	1/2	23,603	1/2	11,695	1/2	665	1/2		1/2		1/2		1/2		1/2	
3/4	49,555	3/4	36,020	3/4	23,347	3/4	11,457	3/4	527	3/4		3/4		3/4		3/4		3/4	
9	49,265	9	35,749	9	23,091	9	11,218	9	388	9		9		9		9		9	
1/4	48,975	1/4	35,477	1/4	22,835	1/4	10,979	1/4	250	1/4		1/4		1/4		1/4		1/4	
1/2	48,685	1/2	35,205	1/2	22,579	1/2	10,741	1/2	112	1/2		1/2		1/2		1/2		1/2	
3/4	48,395	3/4	34,935	3/4	22,324	3/4	10,504	3/4		3/4		3/4		3/4		3/4		3/4	
10	48,106	10	34,665	10	22,069	10	10,266	10		10		10		10		10		10	
1/4	47,816	1/4	34,395	1/4	21,815	1/4	10,029	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	47,527	1/2	34,125	1/2	21,560	1/2	9,792	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	47,239	3/4	33,856	3/4	21,307	3/4	9,556	3/4		3/4		3/4		3/4		3/4		3/4	
11	46,951	11	33,588	11	21,054	11	9,321	11		11		11		11		11		11	
1/4	46,663	1/4	33,319	1/4	20,801	1/4	9,085	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	46,375	1/2	33,051	1/2	20,548	1/2	8,849	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	46,089	3/4	32,783	3/4	20,296	3/4	8,615	3/4		3/4		3/4		3/4		3/4		3/4	

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

PRECISION MEASUREMENT
& ANALYSIS, INC.
P.O. Box 2092
Pearland, Texas 77588
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BARGE "CCL 409"

1 STBD ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 1/2"

0 FT.		1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.		7 FT.		8 FT.		9 FT.			
IN		IN		IN		IN		IN		IN		IN		IN		IN		IN			
0		0	184,831	0	171,204	0	157,293	0	143,364	0	129,436	0	115,508	0	101,577	0	87,647	0	73,717		
1/4		1/4	184,611	1/4	170,916	1/4	157,003	1/4	143,074	1/4	129,146	1/4	115,217	1/4	101,287	1/4	87,357	1/4	73,426		
1/2		1/2	184,392	1/2	170,627	1/2	156,712	1/2	142,784	1/2	128,856	1/2	114,927	1/2	100,997	1/2	87,067	1/2	73,136		
3/4		3/4	184,121	3/4	170,339	3/4	156,422	3/4	142,494	3/4	128,566	3/4	114,637	3/4	100,707	3/4	86,776	3/4	72,846		
1		1	183,850	1	170,050	1	156,132	1	142,204	1	128,275	1	114,347	1	100,416	1	86,486	1	72,556		
1/4		1/4	183,580	1/4	169,762	1/4	155,842	1/4	141,914	1/4	127,985	1/4	114,057	1/4	100,126	1/4	86,196	1/4	72,266		
1/2		1/2	183,309	1/2	169,473	1/2	155,552	1/2	141,623	1/2	127,695	1/2	113,766	1/2	99,836	1/2	85,906	1/2	71,975		
3/4		3/4	183,024	3/4	169,185	3/4	155,262	3/4	141,333	3/4	127,405	3/4	113,476	3/4	99,546	3/4	85,615	3/4	71,685		
2		2	182,738	2	168,896	2	154,971	2	141,043	2	127,115	2	113,186	2	99,256	2	85,325	2	71,395		
1/4		1/4	182,453	1/4	168,608	1/4	154,681	1/4	140,753	1/4	126,825	1/4	112,896	1/4	98,965	1/4	85,035	1/4	71,105		
1/2		1/2	182,167	1/2	168,319	1/2	154,391	1/2	140,463	1/2	126,534	1/2	112,605	1/2	98,675	1/2	84,745	1/2	70,814		
3/4		3/4	181,879	3/4	168,029	3/4	154,101	3/4	140,173	3/4	126,244	3/4	112,315	3/4	98,385	3/4	84,455	3/4	70,524		
3		3	181,590	3	167,739	3	153,811	3	139,882	3	125,954	3	112,025	3	98,095	3	84,164	3	70,234		
1/4		1/4	181,302	1/4	167,449	1/4	153,521	1/4	139,592	1/4	125,664	1/4	111,735	1/4	97,804	1/4	83,874	1/4	69,944		
1/2		1/2	181,013	1/2	167,159	1/2	153,230	1/2	139,302	1/2	125,374	1/2	111,445	1/2	97,514	1/2	83,584	1/2	69,654		
3/4		3/4	180,725	3/4	166,869	3/4	152,940	3/4	139,012	3/4	125,083	3/4	111,154	3/4	97,224	3/4	83,294	3/4	69,363		
4		4	180,436	4	166,578	4	152,650	4	138,722	4	124,793	4	110,864	4	96,934	4	83,003	4	69,073		
1/4		1/4	180,148	1/4	166,288	1/4	152,360	1/4	138,431	1/4	124,503	1/4	110,574	1/4	96,644	1/4	82,713	1/4	68,783		
1/2		1/2	179,859	1/2	165,998	1/2	152,070	1/2	138,141	1/2	124,213	1/2	110,284	1/2	96,353	1/2	82,423	1/2	68,493		
3/4		3/4	179,571	3/4	165,708	3/4	151,779	3/4	137,851	3/4	123,923	3/4	109,994	3/4	96,063	3/4	82,133	3/4	68,202		
5		5	179,282	5	165,418	5	151,489	5	137,561	5	123,633	5	109,703	5	95,773	5	81,843	5	67,912		
1/4		1/4	178,994	1/4	165,127	1/4	151,199	1/4	137,271	1/4	123,342	1/4	109,413	1/4	95,483	1/4	81,552	1/4	67,622		
1/2		1/2	178,705	1/2	164,837	1/2	150,909	1/2	136,981	1/2	123,052	1/2	109,123	1/2	95,193	1/2	81,262	1/2	67,332		
3/4		3/4	178,417	3/4	164,547	3/4	150,619	3/4	136,690	3/4	122,762	3/4	108,833	3/4	94,902	3/4	80,972	3/4	67,042		
6		6	178,128	6	164,257	6	150,329	6	136,400	6	122,472	6	108,542	6	94,612	6	80,682	6	66,751		
1/4		1/4	177,840	1/4	163,967	1/4	150,038	1/4	136,110	1/4	122,182	1/4	108,252	1/4	94,322	1/4	80,392	1/4	66,461		
1/2		1/2	177,551	1/2	163,677	1/2	149,748	1/2	135,820	1/2	121,892	1/2	107,962	1/2	94,032	1/2	80,101	1/2	66,171		
3/4		3/4	177,263	3/4	163,386	3/4	149,458	3/4	135,530	3/4	121,601	3/4	107,672	3/4	93,741	3/4	79,811	3/4	65,881		
7		7	176,974	7	163,096	7	149,168	7	135,240	7	121,311	7	107,382	7	93,451	7	79,521	7	65,591		
1/4		1/4	176,686	1/4	162,806	1/4	148,878	1/4	134,949	1/4	121,021	1/4	107,091	1/4	93,161	1/4	79,231	1/4	65,300		
1/2		1/2	176,397	1/2	162,516	1/2	148,588	1/2	134,659	1/2	120,731	1/2	106,801	1/2	92,871	1/2	78,940	1/2	65,010		
3/4		3/4	176,109	3/4	162,226	3/4	148,297	3/4	134,369	3/4	120,441	3/4	106,511	3/4	92,581	3/4	78,650	3/4	64,720		
8		8	175,820	8	161,936	8	148,007	8	134,079	8	120,151	8	106,221	8	92,290	8	78,360	8	64,430		
1/4		1/4	175,532	1/4	161,645	1/4	147,717	1/4	133,789	1/4	119,860	1/4	105,931	1/4	92,000	1/4	78,070	1/4	64,139		
1/2		1/2	175,243	1/2	161,355	1/2	147,427	1/2	133,499	1/2	119,570	1/2	105,640	1/2	91,710	1/2	77,780	1/2	63,849		
3/4		3/4	174,955	3/4	161,065	3/4	147,137	3/4	133,208	3/4	119,280	3/4	105,350	3/4	91,420	3/4	77,489	3/4	63,559		
9		9	174,666	9	160,775	9	146,847	9	132,918	9	118,990	9	105,060	9	91,130	9	77,199	9	63,269		
1/4		1/4	174,378	1/4	160,485	1/4	146,556	1/4	132,628	1/4	118,700	1/4	104,770	1/4	90,839	1/4	76,909	1/4	62,979		
1/2		1/2	174,089	1/2	160,195	1/2	146,266	1/2	132,338	1/2	118,409	1/2	104,479	1/2	90,549	1/2	76,619	1/2	62,688		
3/4		3/4	173,801	3/4	159,904	3/4	145,976	3/4	132,048	3/4	118,119	3/4	104,189	3/4	90,259	3/4	76,329	3/4	62,398		
10		10	173,512	10	159,614	10	145,686	10	131,757	10	117,829	10	103,899	10	89,969	10	76,038	10	62,108		
1/4		1/4	173,224	1/4	159,324	1/4	145,396	1/4	131,467	1/4	117,539	1/4	103,609	1/4	89,678	1/4	75,748	1/4	61,818		
1/2		1/2	172,935	1/2	159,034	1/2	145,105	1/2	131,177	1/2	117,249	1/2	103,319	1/2	89,388	1/2	75,458	1/2	61,528		
3/4		3/4	172,647	3/4	158,744	3/4	144,815	3/4	130,887	3/4	116,959	3/4	103,028	3/4	89,098	3/4	75,168	3/4	61,237		
11		11	172,358	11	158,453	11	144,525	11	130,597	11	116,668	11	102,738	11	88,808	11	74,877	11	60,947		
1/4		1/4	172,070	1/4	158,163	1/4	144,235	1/4	130,307	1/4	116,378	1/4	102,448	1/4	88,518	1/4	74,587	1/4	60,657		
1/2		1/2	171,781	1/2	157,873	1/2	143,945	1/2	130,016	1/2	116,088	1/2	102,158	1/2	88,227	1/2	74,297	1/2	60,367		
3/4		3/4	185,050	3/4	171,493	3/4	157,583	3/4	143,655	3/4	129,726	3/4	115,798	3/4	101,868	3/4	87,937	3/4	74,007	3/4	60,076

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.

CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.

CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.

CAPACITY TABLE ONLY APPLIES TO ULLAGE GAUGES TAKEN TO TOP OF 2" OPENING ON "HERMETIC" VALVE.

GAUGE POINT: (HERMETIC) LOCATED 12'-06" OFF CENTERLINE AND 43'-09" FORWARD OF AFT BULKHEAD.

PRECISION MEASUREMENT
& ANALYSIS, INC.

P.O. Box 2092

Pearland, Texas 77588

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BARGE "CCL 409"

1 STBD ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 1/2"

10 FT.		11 FT.		12 FT.		13 FT.		14 FT.		15 FT.		16 FT.		17 FT.		18 FT.		19 FT.	
IN		IN		IN		IN		IN		IN		IN		IN		IN		IN	
0	59,786	0	45,875	0	32,550	0	20,052	0	8,384	0		0		0		0		0	
1/4	59,496	1/4	45,588	1/4	32,281	1/4	19,800	1/4	8,150	1/4		1/4		1/4		1/4		1/4	
1/2	59,206	1/2	45,302	1/2	32,012	1/2	19,549	1/2	7,915	1/2		1/2		1/2		1/2		1/2	
3/4	58,916	3/4	45,016	3/4	31,745	3/4	19,298	3/4	7,683	3/4		3/4		3/4		3/4		3/4	
1	58,625	1	44,731	1	31,478	1	19,048	1	7,450	1		1		1		1		1	
1/4	58,335	1/4	44,446	1/4	31,211	1/4	18,798	1/4	7,217	1/4		1/4		1/4		1/4		1/4	
1/2	58,045	1/2	44,161	1/2	30,944	1/2	18,547	1/2	6,984	1/2		1/2		1/2		1/2		1/2	
3/4	57,755	3/4	43,877	3/4	30,678	3/4	18,298	3/4	6,752	3/4		3/4		3/4		3/4		3/4	
2	57,464	2	43,594	2	30,412	2	18,049	2	6,521	2		2		2		2		2	
1/4	57,174	1/4	43,310	1/4	30,147	1/4	17,801	1/4	6,289	1/4		1/4		1/4		1/4		1/4	
1/2	56,884	1/2	43,026	1/2	29,881	1/2	17,552	1/2	6,058	1/2		1/2		1/2		1/2		1/2	
3/4	56,594	3/4	42,744	3/4	29,616	3/4	17,304	3/4	5,828	3/4		3/4		3/4		3/4		3/4	
3	56,304	3	42,462	3	29,351	3	17,057	3	5,598	3		3		3		3		3	
1/4	56,013	1/4	42,179	1/4	29,086	1/4	16,809	1/4	5,368	1/4		1/4		1/4		1/4		1/4	
1/2	55,723	1/2	41,897	1/2	28,821	1/2	16,562	1/2	5,138	1/2		1/2		1/2		1/2		1/2	
3/4	55,433	3/4	41,616	3/4	28,558	3/4	16,316	3/4	4,909	3/4		3/4		3/4		3/4		3/4	
4	55,143	4	41,336	4	28,295	4	16,070	4	4,681	4		4		4		4		4	
1/4	54,853	1/4	41,055	1/4	28,031	1/4	15,824	1/4	4,452	1/4		1/4		1/4		1/4		1/4	
1/2	54,562	1/2	40,774	1/2	27,768	1/2	15,578	1/2	4,223	1/2		1/2		1/2		1/2		1/2	
3/4	54,272	3/4	40,495	3/4	27,506	3/4	15,334	3/4	3,996	3/4		3/4		3/4		3/4		3/4	
5	53,982	5	40,215	5	27,244	5	15,089	5	3,769	5		5		5		5		5	
1/4	53,692	1/4	39,936	1/4	26,982	1/4	14,844	1/4	3,542	1/4		1/4		1/4		1/4		1/4	
1/2	53,401	1/2	39,657	1/2	26,720	1/2	14,600	1/2	3,315	1/2		1/2		1/2		1/2		1/2	
3/4	53,111	3/4	39,379	3/4	26,460	3/4	14,357	3/4	3,089	3/4		3/4		3/4		3/4		3/4	
6	52,821	6	39,101	6	26,199	6	14,114	6	2,863	6		6		6		6		6	
1/4	52,531	1/4	38,823	1/4	25,939	1/4	13,871	1/4	2,638	1/4		1/4		1/4		1/4		1/4	
1/2	52,241	1/2	38,545	1/2	25,678	1/2	13,628	1/2	2,412	1/2		1/2		1/2		1/2		1/2	
3/4	51,950	3/4	38,269	3/4	25,419	3/4	13,386	3/4	2,188	3/4		3/4		3/4		3/4		3/4	
7	51,660	7	37,993	7	25,160	7	13,144	7	1,964	7		7		7		7		7	
1/4	51,370	1/4	37,718	1/4	24,901	1/4	12,903	1/4	1,739	1/4		1/4		1/4		1/4		1/4	
1/2	51,080	1/2	37,442	1/2	24,642	1/2	12,661	1/2	1,515	1/2		1/2		1/2		1/2		1/2	
3/4	50,790	3/4	37,167	3/4	24,385	3/4	12,421	3/4	1,303	3/4		3/4		3/4		3/4		3/4	
8	50,499	8	36,893	8	24,127	8	12,181	8	1,090	8		8		8		8		8	
1/4	50,209	1/4	36,618	1/4	23,869	1/4	11,941	1/4	878	1/4		1/4		1/4		1/4		1/4	
1/2	49,919	1/2	36,344	1/2	23,612	1/2	11,700	1/2	666	1/2		1/2		1/2		1/2		1/2	
3/4	49,629	3/4	36,071	3/4	23,356	3/4	11,462	3/4	527	3/4		3/4		3/4		3/4		3/4	
9	49,338	9	35,798	9	23,100	9	11,223	9	389	9		9		9		9		9	
1/4	49,048	1/4	35,525	1/4	22,843	1/4	10,984	1/4	250	1/4		1/4		1/4		1/4		1/4	
1/2	48,758	1/2	35,252	1/2	22,587	1/2	10,745	1/2	112	1/2		1/2		1/2		1/2		1/2	
3/4	48,469	3/4	34,981	3/4	22,333	3/4	10,508	3/4		3/4		3/4		3/4		3/4		3/4	
10	48,179	10	34,709	10	22,078	10	10,271	10		10		10		10		10		10	
1/4	47,890	1/4	34,438	1/4	21,823	1/4	10,034	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	47,600	1/2	34,167	1/2	21,569	1/2	9,796	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	47,312	3/4	33,897	3/4	21,315	3/4	9,560	3/4		3/4		3/4		3/4		3/4		3/4	
11	47,024	11	33,627	11	21,062	11	9,325	11		11		11		11		11		11	
1/4	46,736	1/4	33,357	1/4	20,809	1/4	9,089	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	46,448	1/2	33,087	1/2	20,556	1/2	8,853	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	46,161	3/4	32,818	3/4	20,304	3/4	8,619	3/4		3/4		3/4		3/4		3/4		3/4	

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

PRECISION MEASUREMENT
& ANALYSIS, INC.
P.O. Box 2092
Pearland, Texas 77588
<http://www.pmacorp.net>



BARGE "CCL 409"

2 PORT ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 1/2"

0 FT.		1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.		7 FT.		8 FT.		9 FT.	
IN		IN		IN		IN		IN		IN		IN		IN		IN		IN	
0		0	224,133	0	208,190	0	191,912	0	175,614	0	159,316	0	143,018	0	126,718	0	110,418	0	94,118
1/4		1/4	223,876	1/4	207,852	1/4	191,572	1/4	175,274	1/4	158,977	1/4	142,679	1/4	126,379	1/4	110,078	1/4	93,778
1/2		1/2	223,620	1/2	207,515	1/2	191,233	1/2	174,935	1/2	158,637	1/2	142,339	1/2	126,039	1/2	109,739	1/2	93,439
3/4		3/4	223,303	3/4	207,177	3/4	190,893	3/4	174,595	3/4	158,298	3/4	142,000	3/4	125,699	3/4	109,399	3/4	93,099
1		1	222,987	1	206,840	1	190,554	1	174,256	1	157,958	1	141,660	1	125,360	1	109,060	1	92,760
1/4		1/4	222,670	1/4	206,502	1/4	190,214	1/4	173,916	1/4	157,619	1/4	141,320	1/4	125,020	1/4	108,720	1/4	92,420
1/2		1/2	222,353	1/2	206,164	1/2	189,874	1/2	173,577	1/2	157,279	1/2	140,981	1/2	124,681	1/2	108,381	1/2	92,080
3/4		3/4	222,019	3/4	205,827	3/4	189,535	3/4	173,237	3/4	156,939	3/4	140,641	3/4	124,341	3/4	108,041	3/4	91,741
2		2	221,685	2	205,489	2	189,195	2	172,898	2	156,600	2	140,302	2	124,002	2	107,701	2	91,401
1/4		1/4	221,351	1/4	205,152	1/4	188,856	1/4	172,558	1/4	156,260	1/4	139,962	1/4	123,662	1/4	107,362	1/4	91,062
1/2		1/2	221,017	1/2	204,814	1/2	188,516	1/2	172,219	1/2	155,921	1/2	139,623	1/2	123,322	1/2	107,022	1/2	90,722
3/4		3/4	220,680	3/4	204,475	3/4	188,177	3/4	171,879	3/4	155,581	3/4	139,283	3/4	122,983	3/4	106,683	3/4	90,382
3		3	220,342	3	204,135	3	187,837	3	171,540	3	155,242	3	138,943	3	122,643	3	106,343	3	90,043
1/4		1/4	220,005	1/4	203,795	1/4	187,498	1/4	171,200	1/4	154,902	1/4	138,604	1/4	122,304	1/4	106,003	1/4	89,703
1/2		1/2	219,667	1/2	203,456	1/2	187,158	1/2	170,860	1/2	154,563	1/2	138,264	1/2	121,964	1/2	105,664	1/2	89,364
3/4		3/4	219,330	3/4	203,116	3/4	186,819	3/4	170,521	3/4	154,223	3/4	137,925	3/4	121,624	3/4	105,324	3/4	89,024
4		4	218,992	4	202,777	4	186,479	4	170,181	4	153,884	4	137,585	4	121,285	4	104,985	4	88,684
1/4		1/4	218,655	1/4	202,437	1/4	186,140	1/4	169,842	1/4	153,544	1/4	137,245	1/4	120,945	1/4	104,645	1/4	88,345
1/2		1/2	218,317	1/2	202,098	1/2	185,800	1/2	169,502	1/2	153,205	1/2	136,906	1/2	120,606	1/2	104,305	1/2	88,005
3/4		3/4	217,979	3/4	201,758	3/4	185,461	3/4	169,163	3/4	152,865	3/4	136,566	3/4	120,266	3/4	103,966	3/4	87,666
5		5	217,642	5	201,419	5	185,121	5	168,823	5	152,525	5	136,227	5	119,926	5	103,626	5	87,326
1/4		1/4	217,304	1/4	201,079	1/4	184,781	1/4	168,484	1/4	152,186	1/4	135,887	1/4	119,587	1/4	103,287	1/4	86,987
1/2		1/2	216,967	1/2	200,740	1/2	184,442	1/2	168,144	1/2	151,846	1/2	135,547	1/2	119,247	1/2	102,947	1/2	86,647
3/4		3/4	216,629	3/4	200,400	3/4	184,102	3/4	167,805	3/4	151,507	3/4	135,208	3/4	118,908	3/4	102,608	3/4	86,307
6		6	216,292	6	200,061	6	183,763	6	167,465	6	151,167	6	134,868	6	118,568	6	102,268	6	85,968
1/4		1/4	215,954	1/4	199,721	1/4	183,423	1/4	167,126	1/4	150,828	1/4	134,529	1/4	118,229	1/4	101,928	1/4	85,628
1/2		1/2	215,616	1/2	199,382	1/2	183,084	1/2	166,786	1/2	150,488	1/2	134,189	1/2	117,889	1/2	101,589	1/2	85,289
3/4		3/4	215,279	3/4	199,042	3/4	182,744	3/4	166,446	3/4	150,149	3/4	133,850	3/4	117,549	3/4	101,249	3/4	84,949
7		7	214,941	7	198,702	7	182,405	7	166,107	7	149,809	7	133,510	7	117,210	7	100,910	7	84,609
1/4		1/4	214,604	1/4	198,363	1/4	182,065	1/4	165,767	1/4	149,470	1/4	133,170	1/4	116,870	1/4	100,570	1/4	84,270
1/2		1/2	214,266	1/2	198,023	1/2	181,726	1/2	165,428	1/2	149,130	1/2	132,831	1/2	116,531	1/2	100,230	1/2	83,930
3/4		3/4	213,929	3/4	197,684	3/4	181,386	3/4	165,088	3/4	148,791	3/4	132,491	3/4	116,191	3/4	99,891	3/4	83,591
8		8	213,591	8	197,344	8	181,047	8	164,749	8	148,451	8	132,152	8	115,851	8	99,551	8	83,251
1/4		1/4	213,253	1/4	197,005	1/4	180,707	1/4	164,409	1/4	148,112	1/4	131,812	1/4	115,512	1/4	99,212	1/4	82,912
1/2		1/2	212,916	1/2	196,665	1/2	180,367	1/2	164,070	1/2	147,772	1/2	131,472	1/2	115,172	1/2	98,872	1/2	82,572
3/4		3/4	212,578	3/4	196,326	3/4	180,028	3/4	163,730	3/4	147,432	3/4	131,133	3/4	114,833	3/4	98,533	3/4	82,232
9		9	212,241	9	195,986	9	179,688	9	163,391	9	147,093	9	130,793	9	114,493	9	98,193	9	81,893
1/4		1/4	211,903	1/4	195,647	1/4	179,349	1/4	163,051	1/4	146,753	1/4	130,454	1/4	114,153	1/4	97,853	1/4	81,553
1/2		1/2	211,566	1/2	195,307	1/2	179,009	1/2	162,712	1/2	146,414	1/2	130,114	1/2	113,814	1/2	97,514	1/2	81,214
3/4		3/4	211,228	3/4	194,968	3/4	178,670	3/4	162,372	3/4	146,074	3/4	129,774	3/4	113,474	3/4	97,174	3/4	80,874
10		10	210,890	10	194,628	10	178,330	10	162,033	10	145,735	10	129,435	10	113,135	10	96,835	10	80,534
1/4		1/4	210,553	1/4	194,288	1/4	177,991	1/4	161,693	1/4	145,395	1/4	129,095	1/4	112,795	1/4	96,495	1/4	80,195
1/2		1/2	210,215	1/2	193,949	1/2	177,651	1/2	161,353	1/2	145,056	1/2	128,756	1/2	112,456	1/2	96,155	1/2	79,855
3/4		3/4	209,878	3/4	193,609	3/4	177,312	3/4	161,014	3/4	144,716	3/4	128,416	3/4	112,116	3/4	95,816	3/4	79,516
11		11	209,540	11	193,270	11	176,972	11	160,674	11	144,377	11	128,077	11	111,776	11	95,476	11	79,176
1/4		1/4	209,203	1/4	192,930	1/4	176,633	1/4	160,335	1/4	144,037	1/4	127,737	1/4	111,437	1/4	95,137	1/4	78,836
1/2		1/2	208,865	1/2	192,591	1/2	176,293	1/2	159,995	1/2	143,698	1/2	127,397	1/2	111,097	1/2	94,797	1/2	78,497
3/4		3/4	224,390	3/4	208,527	3/4	192,251	3/4	175,954	3/4	159,656	3/4	143,358	3/4	127,058	3/4	94,457	3/4	78,157

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.
 CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.
 CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.
 CAPACITY TABLE ONLY APPLIES TO ULLAGE GAUGES TAKEN TO TOP OF 2" OPENING ON "HERMETIC" VALVE.
 GAUGE POINT: (HERMETIC) LOCATED 12'-06" OFF CENTERLINE AND 42'-06" FORWARD OF AFT BULKHEAD.

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

PRECISION MEASUREMENT
& ANALYSIS, INC.

P.O. Box 2092

Pearland, Texas 77588

<http://www.pmacorp.net>



BARGE "CCL 409"

2 PORT ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 1/2"

10 FT.		11 FT.		12 FT.		13 FT.		14 FT.		15 FT.		16 FT.		17 FT.		18 FT.		19 FT.	
IN		IN		IN		IN		IN		IN									
0	77,818	0	61,518	0	45,217	0	29,262	0	13,259	0		0		0		0		0	
1/4	77,478	1/4	61,178	1/4	44,878	1/4	28,936	1/4	12,919	1/4		1/4		1/4		1/4		1/4	
1/2	77,139	1/2	60,838	1/2	44,538	1/2	28,610	1/2	12,580	1/2		1/2		1/2		1/2		1/2	
3/4	76,799	3/4	60,499	3/4	44,199	3/4	28,284	3/4	12,240	3/4		3/4		3/4		3/4		3/4	
1	76,459	1	60,159	1	43,859	1	27,958	1	11,900	1		1		1		1		1	
1/4	76,120	1/4	59,820	1/4	43,519	1/4	27,632	1/4	11,561	1/4		1/4		1/4		1/4		1/4	
1/2	75,780	1/2	59,480	1/2	43,180	1/2	27,306	1/2	11,221	1/2		1/2		1/2		1/2		1/2	
3/4	75,441	3/4	59,140	3/4	42,840	3/4	26,980	3/4	10,882	3/4		3/4		3/4		3/4		3/4	
2	75,101	2	58,801	2	42,501	2	26,654	2	10,542	2		2		2		2		2	
1/4	74,761	1/4	58,461	1/4	42,161	1/4	26,328	1/4	10,203	1/4		1/4		1/4		1/4		1/4	
1/2	74,422	1/2	58,122	1/2	41,822	1/2	26,002	1/2	9,863	1/2		1/2		1/2		1/2		1/2	
3/4	74,082	3/4	57,782	3/4	41,482	3/4	25,676	3/4	9,524	3/4		3/4		3/4		3/4		3/4	
3	73,743	3	57,442	3	41,142	3	25,350	3	9,184	3		3		3		3		3	
1/4	73,403	1/4	57,103	1/4	40,803	1/4	25,024	1/4	8,844	1/4		1/4		1/4		1/4		1/4	
1/2	73,063	1/2	56,763	1/2	40,463	1/2	24,697	1/2	8,505	1/2		1/2		1/2		1/2		1/2	
3/4	72,724	3/4	56,424	3/4	40,124	3/4	24,371	3/4	8,165	3/4		3/4		3/4		3/4		3/4	
4	72,384	4	56,084	4	39,784	4	24,045	4	7,826	4		4		4		4		4	
1/4	72,045	1/4	55,745	1/4	39,444	1/4	23,719	1/4	7,486	1/4		1/4		1/4		1/4		1/4	
1/2	71,705	1/2	55,405	1/2	39,105	1/2	23,393	1/2	7,147	1/2		1/2		1/2		1/2		1/2	
3/4	71,366	3/4	55,065	3/4	38,765	3/4	23,067	3/4	6,807	3/4		3/4		3/4		3/4		3/4	
5	71,026	5	54,726	5	38,426	5	22,740	5	6,467	5		5		5		5		5	
1/4	70,686	1/4	54,386	1/4	38,086	1/4	22,414	1/4	6,128	1/4		1/4		1/4		1/4		1/4	
1/2	70,347	1/2	54,047	1/2	37,746	1/2	22,087	1/2	5,788	1/2		1/2		1/2		1/2		1/2	
3/4	70,007	3/4	53,707	3/4	37,407	3/4	21,748	3/4	5,449	3/4		3/4		3/4		3/4		3/4	
6	69,668	6	53,367	6	37,093	6	21,408	6	5,109	6		6		6		6		6	
1/4	69,328	1/4	53,028	1/4	36,766	1/4	21,069	1/4	4,770	1/4		1/4		1/4		1/4		1/4	
1/2	68,988	1/2	52,688	1/2	36,439	1/2	20,729	1/2	4,430	1/2		1/2		1/2		1/2		1/2	
3/4	68,649	3/4	52,349	3/4	36,113	3/4	20,389	3/4	4,091	3/4		3/4		3/4		3/4		3/4	
7	68,309	7	52,009	7	35,786	7	20,050	7	3,751	7		7		7		7		7	
1/4	67,970	1/4	51,670	1/4	35,459	1/4	19,710	1/4	3,411	1/4		1/4		1/4		1/4		1/4	
1/2	67,630	1/2	51,330	1/2	35,132	1/2	19,371	1/2	3,072	1/2		1/2		1/2		1/2		1/2	
3/4	67,291	3/4	50,990	3/4	34,806	3/4	19,031	3/4	2,744	3/4		3/4		3/4		3/4		3/4	
8	66,951	8	50,651	8	34,479	8	18,692	8	2,417	8		8		8		8		8	
1/4	66,611	1/4	50,311	1/4	34,153	1/4	18,352	1/4	2,090	1/4		1/4		1/4		1/4		1/4	
1/2	66,272	1/2	49,972	1/2	33,826	1/2	18,013	1/2	1,762	1/2		1/2		1/2		1/2		1/2	
3/4	65,932	3/4	49,632	3/4	33,500	3/4	17,673	3/4	1,520	3/4		3/4		3/4		3/4		3/4	
9	65,593	9	49,292	9	33,174	9	17,333	9	1,277	9		9		9		9		9	
1/4	65,253	1/4	48,953	1/4	32,848	1/4	16,994	1/4	1,035	1/4		1/4		1/4		1/4		1/4	
1/2	64,913	1/2	48,613	1/2	32,522	1/2	16,654	1/2	792	1/2		1/2		1/2		1/2		1/2	
3/4	64,574	3/4	48,274	3/4	32,196	3/4	16,315	3/4		3/4		3/4		3/4		3/4		3/4	
10	64,234	10	47,934	10	31,870	10	15,975	10		10		10		10		10		10	
1/4	63,895	1/4	47,594	1/4	31,544	1/4	15,636	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	63,555	1/2	47,255	1/2	31,218	1/2	15,296	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	63,215	3/4	46,915	3/4	30,892	3/4	14,956	3/4		3/4		3/4		3/4		3/4		3/4	
11	62,876	11	46,576	11	30,566	11	14,617	11		11		11		11		11		11	
1/4	62,536	1/4	46,236	1/4	30,239	1/4	14,277	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	62,197	1/2	45,897	1/2	29,913	1/2	13,938	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	61,857	3/4	45,557	3/4	29,587	3/4	13,598	3/4		3/4		3/4		3/4		3/4		3/4	

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

PRECISION MEASUREMENT
& ANALYSIS, INC.
P.O. Box 2092
Pearland, Texas 77588
<http://www.pmacorp.net>



BARGE "CCL 409"

2 STBD ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 3/4"

0 FT.		1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.		7 FT.		8 FT.		9 FT.	
IN		IN		IN		IN		IN		IN		IN		IN		IN		IN	
0		0	224,914	0	209,059	0	192,790	0	176,500	0	160,209	0	143,919	0	127,626	0	111,333	0	95,040
1/4		1/4	224,657	1/4	208,721	1/4	192,451	1/4	176,160	1/4	159,870	1/4	143,579	1/4	127,286	1/4	110,993	1/4	94,700
1/2		1/2	224,401	1/2	208,384	1/2	192,111	1/2	175,821	1/2	159,530	1/2	143,240	1/2	126,947	1/2	110,654	1/2	94,361
3/4		3/4	224,144	3/4	208,047	3/4	191,772	3/4	175,481	3/4	159,191	3/4	142,900	3/4	126,607	3/4	110,314	3/4	94,022
1		1	223,828	1	207,709	1	191,433	1	175,142	1	158,852	1	142,561	1	126,268	1	109,975	1	93,682
1/4		1/4	223,511	1/4	207,372	1/4	191,093	1/4	174,803	1/4	158,512	1/4	142,221	1/4	125,928	1/4	109,636	1/4	93,343
1/2		1/2	223,195	1/2	207,034	1/2	190,754	1/2	174,463	1/2	158,173	1/2	141,882	1/2	125,589	1/2	109,296	1/2	93,003
3/4		3/4	222,878	3/4	206,697	3/4	190,414	3/4	174,124	3/4	157,833	3/4	141,542	3/4	125,250	3/4	108,957	3/4	92,664
2		2	222,544	2	206,360	2	190,075	2	173,784	2	157,494	2	141,203	2	124,910	2	108,617	2	92,324
1/4		1/4	222,210	1/4	206,022	1/4	189,736	1/4	173,445	1/4	157,155	1/4	140,864	1/4	124,571	1/4	108,278	1/4	91,985
1/2		1/2	221,877	1/2	205,685	1/2	189,396	1/2	173,106	1/2	156,815	1/2	140,524	1/2	124,231	1/2	107,938	1/2	91,645
3/4		3/4	221,543	3/4	205,347	3/4	189,057	3/4	172,766	3/4	156,476	3/4	140,185	3/4	123,892	3/4	107,599	3/4	91,306
3		3	221,205	3	205,008	3	188,717	3	172,427	3	156,136	3	139,845	3	123,552	3	107,259	3	90,967
1/4		1/4	220,868	1/4	204,669	1/4	188,378	1/4	172,088	1/4	155,797	1/4	139,506	1/4	123,213	1/4	106,920	1/4	90,627
1/2		1/2	220,531	1/2	204,329	1/2	188,039	1/2	171,748	1/2	155,458	1/2	139,166	1/2	122,874	1/2	106,581	1/2	90,288
3/4		3/4	220,193	3/4	203,990	3/4	187,699	3/4	171,409	3/4	155,118	3/4	138,827	3/4	122,534	3/4	106,241	3/4	89,948
4		4	219,856	4	203,650	4	187,360	4	171,069	4	154,779	4	138,488	4	122,195	4	105,902	4	89,609
1/4		1/4	219,518	1/4	203,311	1/4	187,021	1/4	170,730	1/4	154,440	1/4	138,148	1/4	121,855	1/4	105,562	1/4	89,269
1/2		1/2	219,181	1/2	202,972	1/2	186,681	1/2	170,391	1/2	154,100	1/2	137,809	1/2	121,516	1/2	105,223	1/2	88,930
3/4		3/4	218,844	3/4	202,632	3/4	186,342	3/4	170,051	3/4	153,761	3/4	137,469	3/4	121,176	3/4	104,883	3/4	88,591
5		5	218,506	5	202,293	5	186,002	5	169,712	5	153,421	5	137,130	5	120,837	5	104,544	5	88,251
1/4		1/4	218,169	1/4	201,953	1/4	185,663	1/4	169,372	1/4	153,082	1/4	136,790	1/4	120,497	1/4	104,205	1/4	87,912
1/2		1/2	217,831	1/2	201,614	1/2	185,324	1/2	169,033	1/2	152,743	1/2	136,451	1/2	120,158	1/2	103,865	1/2	87,572
3/4		3/4	217,494	3/4	201,275	3/4	184,984	3/4	168,694	3/4	152,403	3/4	136,112	3/4	119,819	3/4	103,526	3/4	87,233
6		6	217,157	6	200,935	6	184,645	6	168,354	6	152,064	6	135,772	6	119,479	6	103,186	6	86,893
1/4		1/4	216,819	1/4	200,596	1/4	184,305	1/4	168,015	1/4	151,724	1/4	135,433	1/4	119,140	1/4	102,847	1/4	86,554
1/2		1/2	216,482	1/2	200,257	1/2	183,966	1/2	167,676	1/2	151,385	1/2	135,093	1/2	118,800	1/2	102,507	1/2	86,214
3/4		3/4	216,144	3/4	199,917	3/4	183,627	3/4	167,336	3/4	151,046	3/4	134,754	3/4	118,461	3/4	102,168	3/4	85,875
7		7	215,807	7	199,578	7	183,287	7	166,997	7	150,706	7	134,414	7	118,121	7	101,829	7	85,536
1/4		1/4	215,470	1/4	199,238	1/4	182,948	1/4	166,657	1/4	150,367	1/4	134,075	1/4	117,782	1/4	101,489	1/4	85,196
1/2		1/2	215,132	1/2	198,899	1/2	182,609	1/2	166,318	1/2	150,028	1/2	133,735	1/2	117,443	1/2	101,150	1/2	84,857
3/4		3/4	214,795	3/4	198,560	3/4	182,269	3/4	165,979	3/4	149,688	3/4	133,396	3/4	117,103	3/4	100,810	3/4	84,517
8		8	214,457	8	198,220	8	181,930	8	165,639	8	149,349	8	133,057	8	116,764	8	100,471	8	84,178
1/4		1/4	214,120	1/4	197,881	1/4	181,590	1/4	165,300	1/4	149,009	1/4	132,717	1/4	116,424	1/4	100,131	1/4	83,838
1/2		1/2	213,782	1/2	197,541	1/2	181,251	1/2	164,960	1/2	148,670	1/2	132,378	1/2	116,085	1/2	99,792	1/2	83,499
3/4		3/4	213,445	3/4	197,202	3/4	180,912	3/4	164,621	3/4	148,331	3/4	132,038	3/4	115,745	3/4	99,452	3/4	83,160
9		9	213,108	9	196,863	9	180,572	9	164,282	9	147,991	9	131,699	9	115,406	9	99,113	9	82,820
1/4		1/4	212,770	1/4	196,523	1/4	180,233	1/4	163,942	1/4	147,652	1/4	131,359	1/4	115,067	1/4	98,774	1/4	82,481
1/2		1/2	212,433	1/2	196,184	1/2	179,893	1/2	163,603	1/2	147,312	1/2	131,020	1/2	114,727	1/2	98,434	1/2	82,141
3/4		3/4	212,095	3/4	195,845	3/4	179,554	3/4	163,264	3/4	146,973	3/4	130,681	3/4	114,388	3/4	98,095	3/4	81,802
10		10	211,758	10	195,505	10	179,215	10	162,924	10	146,634	10	130,341	10	114,048	10	97,755	10	81,462
1/4		1/4	211,421	1/4	195,166	1/4	178,875	1/4	162,585	1/4	146,294	1/4	130,002	1/4	113,709	1/4	97,416	1/4	81,123
1/2		1/2	211,083	1/2	194,826	1/2	178,536	1/2	162,245	1/2	145,955	1/2	129,662	1/2	113,369	1/2	97,076	1/2	80,784
3/4		3/4	210,746	3/4	194,487	3/4	178,196	3/4	161,906	3/4	145,616	3/4	129,323	3/4	113,030	3/4	96,737	3/4	80,444
11		11	210,408	11	194,148	11	177,857	11	161,567	11	145,276	11	128,983	11	112,690	11	96,398	11	80,105
1/4		1/4	210,071	1/4	193,808	1/4	177,518	1/4	161,227	1/4	144,937	1/4	128,644	1/4	112,351	1/4	96,058	1/4	79,765
1/2		1/2	209,734	1/2	193,469	1/2	177,178	1/2	160,888	1/2	144,597	1/2	128,305	1/2	112,012	1/2	95,719	1/2	79,426
3/4		3/4	209,396	3/4	193,129	3/4	176,839	3/4	160,548	3/4	144,258	3/4	127,965	3/4	111,672	3/4	95,379	3/4	79,086

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.

CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.

CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.

CAPACITY TABLE ONLY APPLIES TO ULLAGE GAUGES TAKEN TO TOP OF 2" OPENING ON "HERMETIC" VALVE.

GAUGE POINT: (HERMETIC) LOCATED 12'-06" OFF CENTERLINE AND 42'-06" FORWARD OF AFT BULKHEAD.

PRECISION MEASUREMENT
& ANALYSIS, INC.

P.O. Box 2092

Pearland, Texas 77588

<http://www.pmacorp.net>



BARGE "CCL 409"

2 STBD ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 3/4"

10 FT.		11 FT.		12 FT.		13 FT.		14 FT.		15 FT.		16 FT.		17 FT.		18 FT.		19 FT.	
IN		IN		IN		IN		IN		IN									
0	78,747	0	62,454	0	46,161	0	29,874	0	13,592	0		0		0		0		0	
1/4	78,407	1/4	62,115	1/4	45,822	1/4	29,535	1/4	13,252	1/4		1/4		1/4		1/4		1/4	
1/2	78,068	1/2	61,775	1/2	45,482	1/2	29,196	1/2	12,913	1/2		1/2		1/2		1/2		1/2	
3/4	77,729	3/4	61,436	3/4	45,143	3/4	28,858	3/4	12,573	3/4		3/4		3/4		3/4		3/4	
1	77,389	1	61,096	1	44,803	1	28,519	1	12,234	1		1		1		1		1	
1/4	77,050	1/4	60,757	1/4	44,464	1/4	28,180	1/4	11,895	1/4		1/4		1/4		1/4		1/4	
1/2	76,710	1/2	60,417	1/2	44,124	1/2	27,841	1/2	11,555	1/2		1/2		1/2		1/2		1/2	
3/4	76,371	3/4	60,078	3/4	43,785	3/4	27,502	3/4	11,216	3/4		3/4		3/4		3/4		3/4	
2	76,031	2	59,739	2	43,446	2	27,163	2	10,876	2		2		2		2		2	
1/4	75,692	1/4	59,399	1/4	43,106	1/4	26,824	1/4	10,537	1/4		1/4		1/4		1/4		1/4	
1/2	75,353	1/2	59,060	1/2	42,767	1/2	26,485	1/2	10,198	1/2		1/2		1/2		1/2		1/2	
3/4	75,013	3/4	58,720	3/4	42,427	3/4	26,146	3/4	9,858	3/4		3/4		3/4		3/4		3/4	
3	74,674	3	58,381	3	42,088	3	25,807	3	9,519	3		3		3		3		3	
1/4	74,334	1/4	58,041	1/4	41,748	1/4	25,468	1/4	9,179	1/4		1/4		1/4		1/4		1/4	
1/2	73,995	1/2	57,702	1/2	41,409	1/2	25,129	1/2	8,840	1/2		1/2		1/2		1/2		1/2	
3/4	73,655	3/4	57,362	3/4	41,070	3/4	24,790	3/4	8,501	3/4		3/4		3/4		3/4		3/4	
4	73,316	4	57,023	4	40,730	4	24,452	4	8,161	4		4		4		4		4	
1/4	72,977	1/4	56,684	1/4	40,391	1/4	24,113	1/4	7,822	1/4		1/4		1/4		1/4		1/4	
1/2	72,637	1/2	56,344	1/2	40,051	1/2	23,774	1/2	7,482	1/2		1/2		1/2		1/2		1/2	
3/4	72,298	3/4	56,005	3/4	39,712	3/4	23,435	3/4	7,143	3/4		3/4		3/4		3/4		3/4	
5	71,958	5	55,665	5	39,372	5	23,095	5	6,803	5		5		5		5		5	
1/4	71,619	1/4	55,326	1/4	39,033	1/4	22,756	1/4	6,464	1/4		1/4		1/4		1/4		1/4	
1/2	71,279	1/2	54,986	1/2	38,694	1/2	22,416	1/2	6,125	1/2		1/2		1/2		1/2		1/2	
3/4	70,940	3/4	54,647	3/4	38,354	3/4	22,077	3/4	5,785	3/4		3/4		3/4		3/4		3/4	
6	70,600	6	54,308	6	38,015	6	21,738	6	5,446	6		6		6		6		6	
1/4	70,261	1/4	53,968	1/4	37,675	1/4	21,398	1/4	5,106	1/4		1/4		1/4		1/4		1/4	
1/2	69,922	1/2	53,629	1/2	37,336	1/2	21,059	1/2	4,767	1/2		1/2		1/2		1/2		1/2	
3/4	69,582	3/4	53,289	3/4	36,996	3/4	20,719	3/4	4,428	3/4		3/4		3/4		3/4		3/4	
7	69,243	7	52,950	7	36,657	7	20,380	7	4,088	7		7		7		7		7	
1/4	68,903	1/4	52,610	1/4	36,317	1/4	20,040	1/4	3,749	1/4		1/4		1/4		1/4		1/4	
1/2	68,564	1/2	52,271	1/2	35,978	1/2	19,701	1/2	3,409	1/2		1/2		1/2		1/2		1/2	
3/4	68,224	3/4	51,931	3/4	35,639	3/4	19,362	3/4	3,070	3/4		3/4		3/4		3/4		3/4	
8	67,885	8	51,592	8	35,299	8	19,022	8	2,743	8		8		8		8		8	
1/4	67,546	1/4	51,253	1/4	34,960	1/4	18,683	1/4	2,415	1/4		1/4		1/4		1/4		1/4	
1/2	67,206	1/2	50,913	1/2	34,620	1/2	18,343	1/2	2,088	1/2		1/2		1/2		1/2		1/2	
3/4	66,867	3/4	50,574	3/4	34,281	3/4	18,004	3/4	1,761	3/4		3/4		3/4		3/4		3/4	
9	66,527	9	50,234	9	33,942	9	17,665	9	1,518	9		9		9		9		9	
1/4	66,188	1/4	49,895	1/4	33,603	1/4	17,325	1/4	1,276	1/4		1/4		1/4		1/4		1/4	
1/2	65,848	1/2	49,555	1/2	33,264	1/2	16,986	1/2	1,034	1/2		1/2		1/2		1/2		1/2	
3/4	65,509	3/4	49,216	3/4	32,925	3/4	16,646	3/4	792	3/4		3/4		3/4		3/4		3/4	
10	65,169	10	48,877	10	32,586	10	16,307	10		10		10		10		10		10	
1/4	64,830	1/4	48,537	1/4	32,247	1/4	15,968	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	64,491	1/2	48,198	1/2	31,908	1/2	15,628	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	64,151	3/4	47,858	3/4	31,569	3/4	15,289	3/4		3/4		3/4		3/4		3/4		3/4	
11	63,812	11	47,519	11	31,230	11	14,949	11		11		11		11		11		11	
1/4	63,472	1/4	47,179	1/4	30,891	1/4	14,610	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	63,133	1/2	46,840	1/2	30,552	1/2	14,270	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	62,793	3/4	46,501	3/4	30,213	3/4	13,931	3/4		3/4		3/4		3/4		3/4		3/4	

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

PRECISION MEASUREMENT
& ANALYSIS, INC.
P.O. Box 2092
Pearland, Texas 77588
<http://www.pmacorp.net>



BARGE "CCL 409"

3 PORT ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 3/4"

0 FT.		1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.		7 FT.		8 FT.		9 FT.	
IN		IN		IN		IN		IN		IN		IN		IN		IN		IN	
0		0	199,019	0	186,031	0	173,195	0	160,342	0	147,489	0	133,247	0	118,101	0	102,943	0	87,786
1/4	1/4	1/4	198,780	1/4	185,765	1/4	172,927	1/4	160,074	1/4	147,221	1/4	132,932	1/4	117,786	1/4	102,628	1/4	87,471
1/2	1/2	1/2	198,541	1/2	185,499	1/2	172,660	1/2	159,807	1/2	146,954	1/2	132,616	1/2	117,470	1/2	102,312	1/2	87,155
3/4	3/4	3/4	198,303	3/4	185,233	3/4	172,392	3/4	159,539	3/4	146,686	3/4	132,301	3/4	117,154	3/4	101,996	3/4	86,840
1		1	198,008	1	184,966	1	172,124	1	159,271	1	146,418	1	131,985	1	116,838	1	101,680	1	86,525
1/4	1/4	1/4	197,714	1/4	184,700	1/4	171,856	1/4	159,003	1/4	146,150	1/4	131,670	1/4	116,522	1/4	101,364	1/4	86,210
1/2	1/2	1/2	197,419	1/2	184,434	1/2	171,589	1/2	158,736	1/2	145,883	1/2	131,354	1/2	116,207	1/2	101,049	1/2	85,896
3/4	3/4	3/4	197,125	3/4	184,168	3/4	171,321	3/4	158,468	3/4	145,615	3/4	131,039	3/4	115,891	3/4	100,733	3/4	85,581
2		2	196,814	2	183,901	2	171,053	2	158,200	2	145,347	2	130,723	2	115,575	2	100,417	2	85,266
1/4	1/4	1/4	196,503	1/4	183,635	1/4	170,785	1/4	157,932	1/4	145,079	1/4	130,408	1/4	115,259	1/4	100,101	1/4	84,951
1/2	1/2	1/2	196,193	1/2	183,369	1/2	170,517	1/2	157,664	1/2	144,811	1/2	130,092	1/2	114,943	1/2	99,785	1/2	84,636
3/4	3/4	3/4	195,882	3/4	183,103	3/4	170,250	3/4	157,397	3/4	144,544	3/4	129,777	3/4	114,628	3/4	99,470	3/4	84,321
3		3	195,616	3	182,835	3	169,982	3	157,129	3	144,276	3	129,461	3	114,312	3	99,154	3	84,007
1/4	1/4	1/4	195,350	1/4	182,567	1/4	169,714	1/4	156,861	1/4	144,008	1/4	129,146	1/4	113,996	1/4	98,838	1/4	83,692
1/2	1/2	1/2	195,083	1/2	182,299	1/2	169,446	1/2	156,593	1/2	143,740	1/2	128,830	1/2	113,680	1/2	98,522	1/2	83,377
3/4	3/4	3/4	194,817	3/4	182,032	3/4	169,179	3/4	156,326	3/4	143,473	3/4	128,515	3/4	113,364	3/4	98,207	3/4	83,062
4		4	194,551	4	181,764	4	168,911	4	156,058	4	143,205	4	128,200	4	113,049	4	97,891	4	82,747
1/4	1/4	1/4	194,285	1/4	181,496	1/4	168,643	1/4	155,790	1/4	142,937	1/4	127,884	1/4	112,733	1/4	97,575	1/4	82,433
1/2	1/2	1/2	194,018	1/2	181,228	1/2	168,375	1/2	155,522	1/2	142,669	1/2	127,569	1/2	112,417	1/2	97,259	1/2	82,118
3/4	3/4	3/4	193,752	3/4	180,961	3/4	168,108	3/4	155,255	3/4	142,402	3/4	127,253	3/4	112,101	3/4	96,943	3/4	81,803
5		5	193,486	5	180,693	5	167,840	5	154,987	5	142,086	5	126,938	5	111,785	5	96,628	5	81,488
1/4	1/4	1/4	193,220	1/4	180,425	1/4	167,572	1/4	154,719	1/4	141,770	1/4	126,622	1/4	111,470	1/4	96,312	1/4	81,173
1/2	1/2	1/2	192,954	1/2	180,157	1/2	167,304	1/2	154,451	1/2	141,454	1/2	126,307	1/2	111,154	1/2	95,996	1/2	80,858
3/4	3/4	3/4	192,687	3/4	179,889	3/4	167,036	3/4	154,183	3/4	141,139	3/4	125,991	3/4	110,838	3/4	95,680	3/4	80,544
6		6	192,421	6	179,622	6	166,769	6	153,916	6	140,823	6	125,676	6	110,522	6	95,364	6	80,229
1/4	1/4	1/4	192,155	1/4	179,354	1/4	166,501	1/4	153,648	1/4	140,507	1/4	125,360	1/4	110,207	1/4	95,049	1/4	79,914
1/2	1/2	1/2	191,889	1/2	179,086	1/2	166,233	1/2	153,380	1/2	140,191	1/2	125,045	1/2	109,891	1/2	94,733	1/2	79,599
3/4	3/4	3/4	191,622	3/4	178,818	3/4	165,965	3/4	153,112	3/4	139,875	3/4	124,729	3/4	109,575	3/4	94,417	3/4	79,284
7		7	191,356	7	178,551	7	165,698	7	152,845	7	139,560	7	124,414	7	109,259	7	94,101	7	78,969
1/4	1/4	1/4	191,090	1/4	178,283	1/4	165,430	1/4	152,577	1/4	139,244	1/4	124,098	1/4	108,943	1/4	93,785	1/4	78,655
1/2	1/2	1/2	190,824	1/2	178,015	1/2	165,162	1/2	152,309	1/2	138,928	1/2	123,783	1/2	108,628	1/2	93,470	1/2	78,340
3/4	3/4	3/4	190,557	3/4	177,747	3/4	164,894	3/4	152,041	3/4	138,612	3/4	123,467	3/4	108,312	3/4	93,154	3/4	78,025
8		8	190,291	8	177,480	8	164,627	8	151,774	8	138,297	8	123,152	8	107,996	8	92,838	8	77,710
1/4	1/4	1/4	190,025	1/4	177,212	1/4	164,359	1/4	151,506	1/4	137,981	1/4	122,836	1/4	107,680	1/4	92,522	1/4	77,395
1/2	1/2	1/2	189,759	1/2	176,944	1/2	164,091	1/2	151,238	1/2	137,665	1/2	122,521	1/2	107,364	1/2	92,207	1/2	77,081
3/4	3/4	3/4	189,492	3/4	176,676	3/4	163,823	3/4	150,970	3/4	137,349	3/4	122,205	3/4	107,049	3/4	91,891	3/4	76,766
9		9	189,226	9	176,408	9	163,555	9	150,702	9	137,034	9	121,890	9	106,733	9	91,575	9	76,451
1/4	1/4	1/4	188,960	1/4	176,141	1/4	163,288	1/4	150,435	1/4	136,718	1/4	121,574	1/4	106,417	1/4	91,259	1/4	76,136
1/2	1/2	1/2	188,694	1/2	175,873	1/2	163,020	1/2	150,167	1/2	136,402	1/2	121,259	1/2	106,101	1/2	90,943	1/2	75,821
3/4	3/4	3/4	188,427	3/4	175,605	3/4	162,752	3/4	149,899	3/4	136,086	3/4	120,943	3/4	105,785	3/4	90,628	3/4	75,506
10		10	188,161	10	175,337	10	162,484	10	149,631	10	135,771	10	120,628	10	105,470	10	90,312	10	75,192
1/4	1/4	1/4	187,895	1/4	175,070	1/4	162,217	1/4	149,364	1/4	135,455	1/4	120,312	1/4	105,154	1/4	89,996	1/4	74,877
1/2	1/2	1/2	187,629	1/2	174,802	1/2	161,949	1/2	149,096	1/2	135,140	1/2	119,996	1/2	104,838	1/2	89,680	1/2	74,562
3/4	3/4	3/4	187,363	3/4	174,534	3/4	161,681	3/4	148,828	3/4	134,825	3/4	119,680	3/4	104,522	3/4	89,364	3/4	74,247
11		11	187,096	11	174,266	11	161,413	11	148,560	11	134,509	11	119,364	11	104,207	11	89,049	11	73,932
1/4	1/4	1/4	186,830	1/4	173,999	1/4	161,146	1/4	148,292	1/4	134,194	1/4	119,049	1/4	103,891	1/4	88,733	1/4	73,617
1/2	1/2	1/2	186,564	1/2	173,731	1/2	160,878	1/2	148,025	1/2	133,878	1/2	118,733	1/2	103,575	1/2	88,417	1/2	73,303
3/4	3/4	3/4	186,298	3/4	173,463	3/4	160,610	3/4	147,757	3/4	133,563	3/4	118,417	3/4	103,259	3/4	88,101	3/4	72,988

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.
 CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.
 CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.
 CAPACITY TABLE ONLY APPLIES TO ULLAGE GAUGES TAKEN TO TOP OF 2" OPENING ON "HERMETIC" VALVE.
 GAUGE POINT: (HERMETIC) LOCATED 12'-06" OFF CENTERLINE AND 58'-09" FORWARD OF AFT BULKHEAD.

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

PRECISION MEASUREMENT
& ANALYSIS, INC.

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Pearland, Texas 77588

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BARGE "CCL 409"

3 PORT ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 3/4"

10 FT.		11 FT.		12 FT.		13 FT.		14 FT.		15 FT.		16 FT.		17 FT.		18 FT.		19 FT.			
IN	0	IN	0	IN	0	IN	0	IN	0	IN	0	IN	0								
1/4	72,357	1/4	57,207	1/4	42,056	1/4	27,225	1/4	12,333	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	72,042	1/2	56,891	1/2	41,741	1/2	26,921	1/2	12,018	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	71,727	3/4	56,576	3/4	41,426	3/4	26,618	3/4	11,702	3/4		3/4		3/4		3/4		3/4		3/4	
1	71,411	1	56,260	1	41,111	1	26,315	1	11,386	1		1		1		1		1		1	
1/4	71,095	1/4	55,944	1/4	40,795	1/4	26,011	1/4	11,070	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	70,780	1/2	55,629	1/2	40,480	1/2	25,708	1/2	10,754	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	70,464	3/4	55,313	3/4	40,165	3/4	25,404	3/4	10,438	3/4		3/4		3/4		3/4		3/4		3/4	
2	70,149	2	54,997	2	39,849	2	25,101	2	10,123	2		2		2		2		2		2	
1/4	69,833	1/4	54,682	1/4	39,534	1/4	24,797	1/4	9,807	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	69,517	1/2	54,366	1/2	39,219	1/2	24,493	1/2	9,491	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	69,202	3/4	54,050	3/4	38,904	3/4	24,190	3/4	9,175	3/4		3/4		3/4		3/4		3/4		3/4	
3	68,886	3	53,735	3	38,588	3	23,886	3	8,859	3		3		3		3		3		3	
1/4	68,570	1/4	53,419	1/4	38,273	1/4	23,583	1/4	8,543	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	68,255	1/2	53,103	1/2	37,958	1/2	23,279	1/2	8,228	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	67,939	3/4	52,788	3/4	37,643	3/4	22,975	3/4	7,912	3/4		3/4		3/4		3/4		3/4		3/4	
4	67,623	4	52,472	4	37,327	4	22,672	4	7,596	4		4		4		4		4		4	
1/4	67,308	1/4	52,156	1/4	37,012	1/4	22,368	1/4	7,280	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	66,992	1/2	51,841	1/2	36,697	1/2	22,065	1/2	6,964	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	66,676	3/4	51,525	3/4	36,381	3/4	21,761	3/4	6,649	3/4		3/4		3/4		3/4		3/4		3/4	
5	66,361	5	51,209	5	36,066	5	21,457	5	6,333	5		5		5		5		5		5	
1/4	66,045	1/4	50,894	1/4	35,751	1/4	21,153	1/4	6,017	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	65,729	1/2	50,578	1/2	35,436	1/2	20,849	1/2	5,701	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	65,414	3/4	50,263	3/4	35,120	3/4	20,545	3/4	5,385	3/4		3/4		3/4		3/4		3/4		3/4	
6	65,098	6	49,947	6	34,817	6	20,229	6	5,069	6		6		6		6		6		6	
1/4	64,782	1/4	49,631	1/4	34,513	1/4	19,913	1/4	4,754	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	64,467	1/2	49,316	1/2	34,210	1/2	19,597	1/2	4,438	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	64,151	3/4	49,000	3/4	33,906	3/4	19,282	3/4	4,122	3/4		3/4		3/4		3/4		3/4		3/4	
7	63,836	7	48,684	7	33,602	7	18,966	7	3,806	7		7		7		7		7		7	
1/4	63,520	1/4	48,369	1/4	33,299	1/4	18,650	1/4	3,490	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	63,204	1/2	48,053	1/2	32,995	1/2	18,334	1/2	3,174	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	62,889	3/4	47,737	3/4	32,691	3/4	18,018	3/4	2,859	3/4		3/4		3/4		3/4		3/4		3/4	
8	62,573	8	47,422	8	32,387	8	17,702	8	2,554	8		8		8		8		8		8	
1/4	62,257	1/4	47,106	1/4	32,083	1/4	17,387	1/4	2,249	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	61,942	1/2	46,790	1/2	31,779	1/2	17,071	1/2	1,945	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	61,626	3/4	46,475	3/4	31,475	3/4	16,755	3/4	1,640	3/4		3/4		3/4		3/4		3/4		3/4	
9	61,310	9	46,159	9	31,172	9	16,439	9	1,415	9		9		9		9		9		9	
1/4	60,995	1/4	45,843	1/4	30,868	1/4	16,123	1/4	1,189	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	60,679	1/2	45,528	1/2	30,564	1/2	15,808	1/2	964	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	60,363	3/4	45,212	3/4	30,261	3/4	15,492	3/4	738	3/4		3/4		3/4		3/4		3/4		3/4	
10	60,048	10	44,896	10	29,957	10	15,176	10		10		10		10		10		10		10	
1/4	59,732	1/4	44,581	1/4	29,653	1/4	14,860	1/4		1/4		1/4		1/4		1/4		1/4		1/4	
1/2	59,416	1/2	44,265	1/2	29,350	1/2	14,544	1/2		1/2		1/2		1/2		1/2		1/2		1/2	
3/4	59,101	3/4	43,950	3/4	29,046	3/4	14,228	3/4		3/4		3/4		3/4		3/4		3/4		3/4	
11	58,785	11	43,634	11	28,743	11	13,913	11		11		11		11		11		11		11	
1/4	58,469	1/4	43,318	1/4	28,439	1/4	13,597	1/4		1/4		1/4		1/4		1/4		1/4		1/4	
1/2	58,154	1/2	43,003	1/2	28,135	1/2	13,281	1/2		1/2		1/2		1/2		1/2		1/2		1/2	
3/4	57,838	3/4	42,687	3/4	27,832	3/4	12,965	3/4		3/4		3/4		3/4		3/4		3/4		3/4	

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

PRECISION MEASUREMENT
& ANALYSIS, INC.
P.O. Box 2092
Pearland, Texas 77588
<http://www.pmacorp.net>



BARGE "CCL 409"

3 STBD ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 3/4"

0 FT.		1 FT.		2 FT.		3 FT.		4 FT.		5 FT.		6 FT.		7 FT.		8 FT.		9 FT.	
IN		IN		IN		IN		IN		IN		IN		IN		IN		IN	
0		0	198,863	0	185,872	0	173,033	0	160,178	0	147,322	0	133,091	0	117,965	0	102,831	0	87,700
1/4	1/4	1/4	198,624	1/4	185,606	1/4	172,766	1/4	159,910	1/4	147,054	1/4	132,776	1/4	117,649	1/4	102,516	1/4	87,386
1/2	1/2	1/2	198,385	1/2	185,340	1/2	172,498	1/2	159,642	1/2	146,786	1/2	132,461	1/2	117,334	1/2	102,201	1/2	87,073
3/4	3/4	3/4	198,146	3/4	185,074	3/4	172,230	3/4	159,374	3/4	146,518	3/4	132,146	3/4	117,018	3/4	101,886	3/4	86,759
1	1	1	197,852	1	184,807	1	171,962	1	159,106	1	146,251	1	131,831	1	116,703	1	101,571	1	86,447
1/4	1/4	1/4	197,557	1/4	184,541	1/4	171,694	1/4	158,839	1/4	145,983	1/4	131,516	1/4	116,388	1/4	101,256	1/4	86,134
1/2	1/2	1/2	197,263	1/2	184,275	1/2	171,427	1/2	158,571	1/2	145,715	1/2	131,200	1/2	116,072	1/2	100,941	1/2	85,822
3/4	3/4	3/4	196,968	3/4	184,008	3/4	171,159	3/4	158,303	3/4	145,447	3/4	130,885	3/4	115,757	3/4	100,626	3/4	85,510
2	2	2	196,658	2	183,742	2	170,891	2	158,035	2	145,179	2	130,570	2	115,442	2	100,311	2	85,198
1/4	1/4	1/4	196,347	1/4	183,476	1/4	170,623	1/4	157,767	1/4	144,911	1/4	130,255	1/4	115,126	1/4	99,996	1/4	84,886
1/2	1/2	1/2	196,036	1/2	183,209	1/2	170,355	1/2	157,499	1/2	144,644	1/2	129,940	1/2	114,811	1/2	99,681	1/2	84,573
3/4	3/4	3/4	195,725	3/4	182,943	3/4	170,087	3/4	157,232	3/4	144,376	3/4	129,625	3/4	114,495	3/4	99,366	3/4	84,261
3	3	3	195,459	3	182,675	3	169,820	3	156,964	3	144,108	3	129,310	3	114,180	3	99,051	3	83,949
1/4	1/4	1/4	195,193	1/4	182,408	1/4	169,552	1/4	156,696	1/4	143,840	1/4	128,995	1/4	113,865	1/4	98,736	1/4	83,637
1/2	1/2	1/2	194,927	1/2	182,140	1/2	169,284	1/2	156,428	1/2	143,572	1/2	128,680	1/2	113,549	1/2	98,421	1/2	83,325
3/4	3/4	3/4	194,660	3/4	181,872	3/4	169,016	3/4	156,160	3/4	143,304	3/4	128,365	3/4	113,234	3/4	98,106	3/4	83,012
4	4	4	194,394	4	181,604	4	168,748	4	155,892	4	143,037	4	128,050	4	112,919	4	97,791	4	82,700
1/4	1/4	1/4	194,128	1/4	181,336	1/4	168,480	1/4	155,625	1/4	142,769	1/4	127,735	1/4	112,603	1/4	97,476	1/4	82,388
1/2	1/2	1/2	193,861	1/2	181,068	1/2	168,213	1/2	155,357	1/2	142,501	1/2	127,420	1/2	112,288	1/2	97,161	1/2	82,076
3/4	3/4	3/4	193,595	3/4	180,801	3/4	167,945	3/4	155,089	3/4	142,233	3/4	127,105	3/4	111,972	3/4	96,846	3/4	81,763
5	5	5	193,329	5	180,533	5	167,677	5	154,821	5	141,918	5	126,789	5	111,657	5	96,531	5	81,451
1/4	1/4	1/4	193,062	1/4	180,265	1/4	167,409	1/4	154,553	1/4	141,602	1/4	126,474	1/4	111,342	1/4	96,216	1/4	81,139
1/2	1/2	1/2	192,796	1/2	179,997	1/2	167,141	1/2	154,285	1/2	141,287	1/2	126,159	1/2	111,026	1/2	95,900	1/2	80,827
3/4	3/4	3/4	192,530	3/4	179,729	3/4	166,873	3/4	154,018	3/4	140,972	3/4	125,844	3/4	110,711	3/4	95,585	3/4	80,515
6	6	6	192,264	6	179,461	6	166,606	6	153,750	6	140,656	6	125,529	6	110,396	6	95,269	6	80,202
1/4	1/4	1/4	191,997	1/4	179,194	1/4	166,338	1/4	153,482	1/4	140,341	1/4	125,214	1/4	110,080	1/4	94,954	1/4	79,890
1/2	1/2	1/2	191,731	1/2	178,926	1/2	166,070	1/2	153,214	1/2	140,026	1/2	124,899	1/2	109,765	1/2	94,638	1/2	79,578
3/4	3/4	3/4	191,465	3/4	178,658	3/4	165,802	3/4	152,946	3/4	139,710	3/4	124,584	3/4	109,449	3/4	94,323	3/4	79,266
7	7	7	191,198	7	178,390	7	165,534	7	152,678	7	139,395	7	124,269	7	109,134	7	94,008	7	78,954
1/4	1/4	1/4	190,932	1/4	178,122	1/4	165,266	1/4	152,411	1/4	139,080	1/4	123,954	1/4	108,819	1/4	93,692	1/4	78,641
1/2	1/2	1/2	190,666	1/2	177,854	1/2	164,999	1/2	152,143	1/2	138,764	1/2	123,639	1/2	108,503	1/2	93,377	1/2	78,329
3/4	3/4	3/4	190,400	3/4	177,587	3/4	164,731	3/4	151,875	3/4	138,449	3/4	123,324	3/4	108,188	3/4	93,061	3/4	78,017
8	8	8	190,133	8	177,319	8	164,463	8	151,607	8	138,134	8	123,009	8	107,872	8	92,746	8	77,705
1/4	1/4	1/4	189,867	1/4	177,051	1/4	164,195	1/4	151,339	1/4	137,818	1/4	122,693	1/4	107,557	1/4	92,430	1/4	77,393
1/2	1/2	1/2	189,601	1/2	176,783	1/2	163,927	1/2	151,071	1/2	137,503	1/2	122,378	1/2	107,242	1/2	92,115	1/2	77,080
3/4	3/4	3/4	189,334	3/4	176,515	3/4	163,659	3/4	150,804	3/4	137,188	3/4	122,063	3/4	106,926	3/4	91,799	3/4	76,768
9	9	9	189,068	9	176,247	9	163,392	9	150,536	9	136,872	9	121,748	9	106,611	9	91,484	9	76,456
1/4	1/4	1/4	188,802	1/4	175,980	1/4	163,124	1/4	150,268	1/4	136,557	1/4	121,433	1/4	106,296	1/4	91,169	1/4	76,144
1/2	1/2	1/2	188,535	1/2	175,712	1/2	162,856	1/2	150,000	1/2	136,242	1/2	121,118	1/2	105,981	1/2	90,853	1/2	75,832
3/4	3/4	3/4	188,269	3/4	175,444	3/4	162,588	3/4	149,732	3/4	135,926	3/4	120,803	3/4	105,666	3/4	90,538	3/4	75,519
10	10	10	188,003	10	175,176	10	162,320	10	149,464	10	135,611	10	120,488	10	105,351	10	90,222	10	75,207
1/4	1/4	1/4	187,737	1/4	174,908	1/4	162,052	1/4	149,197	1/4	135,296	1/4	120,172	1/4	105,036	1/4	89,907	1/4	74,895
1/2	1/2	1/2	187,470	1/2	174,640	1/2	161,785	1/2	148,929	1/2	134,981	1/2	119,857	1/2	104,721	1/2	89,591	1/2	74,583
3/4	3/4	3/4	187,204	3/4	174,373	3/4	161,517	3/4	148,661	3/4	134,666	3/4	119,541	3/4	104,406	3/4	89,276	3/4	74,271
11	11	11	186,938	11	174,105	11	161,249	11	148,393	11	134,351	11	119,226	11	104,091	11	88,960	11	73,958
1/4	1/4	1/4	186,671	1/4	173,837	1/4	160,981	1/4	148,125	1/4	134,036	1/4	118,911	1/4	103,776	1/4	88,645	1/4	73,646
1/2	1/2	1/2	186,405	1/2	173,569	1/2	160,713	1/2	147,857	1/2	133,721	1/2	118,595	1/2	103,461	1/2	88,330	1/2	73,334
3/4	3/4	3/4	186,139	3/4	173,301	3/4	160,445	3/4	147,590	3/4	133,406	3/4	118,280	3/4	103,146	3/4	88,014	3/4	73,022

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

BARGE STRAPPED AND COMPUTED IN ACCORDANCE WITH MPMS CHAPTER 2.7.

CAPACITY TABLE ONLY APPLIES WHEN BARGE IS ON EVEN KEEL.

CAPACITY TABLE EXTENDS TO EXTREME HEIGHT OF TANK.

CAPACITY TABLE ONLY APPLIES TO ULLAGE GAUGES TAKEN TO TOP OF 2" OPENING ON "HERMETIC" VALVE.

GAUGE POINT: (HERMETIC) LOCATED 12'-06" OFF CENTERLINE AND 58'-09" FORWARD OF AFT BULKHEAD.

PRECISION MEASUREMENT
& ANALYSIS, INC.

P.O. Box 2092

Pearland, Texas 77588

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BARGE "CCL 409"

3 STBD ULLAGE TABLE

CAPACITIES GIVEN IN WHOLE GALLONS

GAUGE HEIGHT 14'-09 3/4"

IN	10 FT.	IN	11 FT.	IN	12 FT.	IN	13 FT.	IN	14 FT.	IN	15 FT.	IN	16 FT.	IN	17 FT.	IN	18 FT.	IN	19 FT.
0	72,708	0	57,578	0	42,444	0	27,548	0	12,635	0		0		0		0		0	
1/4	72,394	1/4	57,263	1/4	42,128	1/4	27,242	1/4	12,319	1/4		1/4		1/4		1/4		1/4	
1/2	72,080	1/2	56,948	1/2	41,813	1/2	26,937	1/2	12,004	1/2		1/2		1/2		1/2		1/2	
3/4	71,767	3/4	56,632	3/4	41,498	3/4	26,632	3/4	11,688	3/4		3/4		3/4		3/4		3/4	
1	71,451	1	56,317	1	41,182	1	26,326	1	11,373	1		1		1		1		1	
1/4	71,136	1/4	56,002	1/4	40,867	1/4	26,021	1/4	11,057	1/4		1/4		1/4		1/4		1/4	
1/2	70,821	1/2	55,686	1/2	40,552	1/2	25,716	1/2	10,742	1/2		1/2		1/2		1/2		1/2	
3/4	70,506	3/4	55,371	3/4	40,236	3/4	25,410	3/4	10,427	3/4		3/4		3/4		3/4		3/4	
2	70,190	2	55,056	2	39,921	2	25,105	2	10,111	2		2		2		2		2	
1/4	69,875	1/4	54,740	1/4	39,606	1/4	24,799	1/4	9,796	1/4		1/4		1/4		1/4		1/4	
1/2	69,560	1/2	54,425	1/2	39,291	1/2	24,494	1/2	9,480	1/2		1/2		1/2		1/2		1/2	
3/4	69,244	3/4	54,110	3/4	38,975	3/4	24,188	3/4	9,165	3/4		3/4		3/4		3/4		3/4	
3	68,929	3	53,794	3	38,660	3	23,883	3	8,850	3		3		3		3		3	
1/4	68,614	1/4	53,479	1/4	38,345	1/4	23,577	1/4	8,534	1/4		1/4		1/4		1/4		1/4	
1/2	68,298	1/2	53,164	1/2	38,029	1/2	23,271	1/2	8,219	1/2		1/2		1/2		1/2		1/2	
3/4	67,983	3/4	52,849	3/4	37,714	3/4	22,966	3/4	7,903	3/4		3/4		3/4		3/4		3/4	
4	67,668	4	52,533	4	37,399	4	22,660	4	7,588	4		4		4		4		4	
1/4	67,352	1/4	52,218	1/4	37,083	1/4	22,355	1/4	7,273	1/4		1/4		1/4		1/4		1/4	
1/2	67,037	1/2	51,903	1/2	36,768	1/2	22,049	1/2	6,957	1/2		1/2		1/2		1/2		1/2	
3/4	66,722	3/4	51,587	3/4	36,453	3/4	21,744	3/4	6,642	3/4		3/4		3/4		3/4		3/4	
5	66,407	5	51,272	5	36,138	5	21,438	5	6,326	5		5		5		5		5	
1/4	66,091	1/4	50,957	1/4	35,822	1/4	21,132	1/4	6,011	1/4		1/4		1/4		1/4		1/4	
1/2	65,776	1/2	50,641	1/2	35,507	1/2	20,826	1/2	5,695	1/2		1/2		1/2		1/2		1/2	
3/4	65,461	3/4	50,326	3/4	35,192	3/4	20,520	3/4	5,380	3/4		3/4		3/4		3/4		3/4	
6	65,145	6	50,011	6	34,886	6	20,204	6	5,065	6		6		6		6		6	
1/4	64,830	1/4	49,696	1/4	34,580	1/4	19,889	1/4	4,749	1/4		1/4		1/4		1/4		1/4	
1/2	64,515	1/2	49,380	1/2	34,274	1/2	19,574	1/2	4,434	1/2		1/2		1/2		1/2		1/2	
3/4	64,199	3/4	49,065	3/4	33,968	3/4	19,258	3/4	4,118	3/4		3/4		3/4		3/4		3/4	
7	63,884	7	48,750	7	33,662	7	18,943	7	3,803	7		7		7		7		7	
1/4	63,569	1/4	48,434	1/4	33,356	1/4	18,627	1/4	3,488	1/4		1/4		1/4		1/4		1/4	
1/2	63,254	1/2	48,119	1/2	33,050	1/2	18,312	1/2	3,172	1/2		1/2		1/2		1/2		1/2	
3/4	62,938	3/4	47,804	3/4	32,744	3/4	17,997	3/4	2,857	3/4		3/4		3/4		3/4		3/4	
8	62,623	8	47,488	8	32,438	8	17,681	8	2,553	8		8		8		8		8	
1/4	62,308	1/4	47,173	1/4	32,132	1/4	17,366	1/4	2,249	1/4		1/4		1/4		1/4		1/4	
1/2	61,992	1/2	46,858	1/2	31,826	1/2	17,050	1/2	1,944	1/2		1/2		1/2		1/2		1/2	
3/4	61,677	3/4	46,543	3/4	31,520	3/4	16,735	3/4	1,640	3/4		3/4		3/4		3/4		3/4	
9	61,362	9	46,227	9	31,214	9	16,419	9	1,415	9		9		9		9		9	
1/4	61,046	1/4	45,912	1/4	30,909	1/4	16,104	1/4	1,189	1/4		1/4		1/4		1/4		1/4	
1/2	60,731	1/2	45,597	1/2	30,603	1/2	15,789	1/2	963	1/2		1/2		1/2		1/2		1/2	
3/4	60,416	3/4	45,281	3/4	30,298	3/4	15,473	3/4	738	3/4		3/4		3/4		3/4		3/4	
10	60,101	10	44,966	10	29,992	10	15,158	10		10		10		10		10		10	
1/4	59,785	1/4	44,651	1/4	29,687	1/4	14,842	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	59,470	1/2	44,335	1/2	29,381	1/2	14,527	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	59,155	3/4	44,020	3/4	29,075	3/4	14,212	3/4		3/4		3/4		3/4		3/4		3/4	
11	58,839	11	43,705	11	28,770	11	13,896	11		11		11		11		11		11	
1/4	58,524	1/4	43,390	1/4	28,464	1/4	13,581	1/4		1/4		1/4		1/4		1/4		1/4	
1/2	58,209	1/2	43,074	1/2	28,159	1/2	13,265	1/2		1/2		1/2		1/2		1/2		1/2	
3/4	57,893	3/4	42,759	3/4	27,853	3/4	12,950	3/4		3/4		3/4		3/4		3/4		3/4	

CERTIFIED CHART FOR THE ABOVE NAMED TANK ONLY.

STRAPPED: 07/24/2013 CL - SW
CALCULATED: 07/24/2013 CL
PRINTED: 07/25/2013 SW

CANCELS AND SUPERCEDES
ALL PRIOR TO 07/2013

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