

APPLICATION FOR OSHPD SPECIAL SEISMIC	OFFICE US	E ONLY
CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #: O	SP – 0188-10
OSHPD Special Seismic Certification Preapproval (OSP)		
Type: 🗌 New 🛛 Renewal		
Manufacturer Information		
Manufacturer: Trane		
Manufacturer's Technical Representative: Shawn Jennings		
Mailing Address: 101 William White Boulevard, Pueblo CO 81001		
Telephone: 719-585-4392 Email: shawn	jennings@irco.com	
Product Information		
Product Name: _ RTWD Series R		
Product Type: Helical Rotary Water Cooler Liquid Chiller		
Product Model Number: <u>RTWD 80 to 250 Ton Cooling Capacity</u> (List all unique product identification numbers and/or part numbers) Cataloged Shell & Tube Chillers. Seismic enh General Description: modifications	ancement made to the test	t units and
required to address the anomalies observed during the tests shall be	incorporated into the produ	uction units.
Mounting Description: Base Mounted on Elastomeric Pads or on Spri	ng Vibration Isolators, with	new enlarged feet
welded onto existing feet.		
Applicant Information		
Applicant Company Name: The VMC Group		
Contact Person:		
Mailing Address:113 Main Street, Bloomingdale NJ 07403		
Telephone: 973-838-1780 Email: john.gi	uliano@thevmcgroup.com	
I hereby agree to reimburse the Office of Statewide Health F accordance with the California Administrative Code, 2016. Signature of Applicant:		ment review fees in 5-25-16
"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs" STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY	MM	OSHPD



California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)								
Company Name: The VMC Group								
Name: Kenneth Tarlow California License Number: SE2851								
Mailing Address: 113 Main Street, Bloomingdale NJ 07403								
Telephone: 973-838-1780 Email: ken.tarlow@thevmcgroup.com								
Supports and Attachments Preapproval								
Supports and attachments are preapproved under OPM- (Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)								
Supports and attachments are not preapproved	_							
Certification Method								
 Testing in accordance with: ICC-ES AC156 Other (Please Specify):								
Testing Laboratory								
Company Name: UCSD & Clark Dynamic Testing Laboratory								
Contact Name:Gianmario Benzoni (UCSD) & JR Antenucci (Clark)								
Department of Structural Engineering, La Jolla CA 92093 (UCSD) & 1801 Route 51 South, Mailing Address:								
858-534-1432 (UCSD) & 412-382-5500 <u>gbenzoni@ucsd.edu</u> (UCSD) & Telephone: (Clark) Email: jrantenucci@clarkdynamic.com (Clark)								

OSHPD



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY OSH-FD-759 (REV 12/16/15)

Page	2	of	3
------	---	----	---

Seismic Parameters
Design in accordance with ASCE 7-10 Chapter 13: 🖂 Yes 🗌 No
Design Basis of Equipment or Components $(F_p/W_p) = 1.8$
S _{DS} (Design spectral response acceleration at short period, g) = 0.8 (Spring Isolated) & 1.0 (Elastomeric Pads)
a _p (In-structure equipment or component amplification factor) = <u>2.5 (Spring Isolated) & 2.5 (Elastomeric Pads)</u>
R_p (Equipment or component response modification factor) = <u>2.0 (Spring Isolated) & 2.5 (Elastomeric Pads)</u>
Ω_0 (System overstrength factor) = 2.0
I_p (Importance factor) = 1.5
z/h (Height factor ratio) =
Equipment or Component Natural Frequencies (Hz) = <u>See Attachments</u>
Overall dimensions and weight (or range thereof) = <u>See Attachments</u>
Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: 🗌 Yes 🛛 No
Design Basis of Equipment or Components (V/W) =
S _{DS} (Design spectral response acceleration at short period, g) =
S _{D1} (Design spectral response acceleration at 1 second period, g) =
R (Response modification coefficient) =
Ω_0 (System overstrength factor) =
C _d (Deflection amplification factor) =
I_p (Importance factor) = 1.5
Height to Center of Gravity above base =
Equipment or Component Natural Frequencies (Hz) =
Overall dimensions and weight (or range thereof) =
Tank(s) designed in accordance with ASME BPVC, 2015: 🗌 Yes 🖾 No
List of Attachments Supporting Special Seismic Certification
☐ Test Report(s) ☐ Drawings ☐ Calculations ☐ Manufacturer's Catalog
Other(s) (Please Specify):
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022
Signature: Date:
Print Name: M. R. Karim Title: SHFR
Special Seismic Certification Valid Up to : S _{DS} (g) = <u>See Above</u> z/h = <u>1.0</u>
Condition of Approval (if applicable):
"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"
Og/14/2016 OSP-0188-10 Page 3 of 9

Chiller		Ма	x Dimensi	ons Within	Range						
Model	Unit Size	Length (in)		Height (in)	Operating Weight (lbs)	Efficiency	Evaporator	Condenser	Material	Mfr	UUT
	80	142.5	35.1	76.1	5900	Standard	E1B03	C1B04			1A, 1B
	80	142.5	35.1	76.1	5900	High	E1A03	C1A03			interpolated
	90	142.5	35.1	76.1	5933	Standard	E1B03	C1B03			interpolated
	90	142.5	55.1	70.1	3333	High	E1A01	C1A02			interpolated
	100	142.5	35.1	76.9	6255	Standard	E1B02	C1B02			interpolated
	100	142.5	55.1	70.5	0233	High	E2A04	C2A04			interpolated
	110	142.5	35.1	76.9	6475	Standard	E1B01	C1B01			interpolated
	110	142.5	55.1	70.9	0475	High	E2A03	C2A03			interpolated
	120	142.5	35.1	76.9	6531	Standard	E2B04	C2B03			interpolated
	120	142.5	55.1	70.9	0331	High E2A0	E2A02	C2A02	Carbon	Trane	interpolated
	130	142.5	35.1	76.9	6544	Standard	E2B03	C2B03			interpolated
RTWD	130	142.5	55.1	70.5	0344	High	E2A01	C2A01	Steel		interpolated
	140	142.5	34.8	76.9	6972	Standard	E2B02	C2B02	Oleci		interpolated
	150	150.8	49.4	76.8	8735	High	E3A04	C3A04			interpolated
	150	150.0	-9	70.0	0755	Premium	E4A03	C4A03			interpolated
	160	150.8	49.4	76.8	9182	High	E3A03	C3A03			interpolated
	160	150.0	-9	70.0	9102	Premium	E4A03	C4A03			interpolated
	180	150.8	49.4	76.8	9304	High	E3A02	C3A02			interpolated
	180	150.0	-9	70.0	9304	Premium	E4A02	C4A02			interpolated
	200	150.8	49.4	76.8	9348	High	E3A01	C3A01			interpolated
	200	130.0	דינד	/0.0	9970	Premium	E4A01	C4A02			interpolated
	220	136.7	49.9	76.9	9491	High	E5A03	C5A03			interpolated
	250	136.7	49.9	76.9	10070	High	E5A01	C5A01			2A, 2B

Table 1 - Product Matrix

Table 2 - Compressor

Size	Manufacturer	Material	UUT
GP2 K1			1
GP2 K2			interpolated
GP2 L1			interpolated
GP2 L2	Trane	Cast Iron	interpolated
GP2 M1	Trane	Class 35	interpolated
GP2 M2			interpolated
GP2 N1			interpolated
GP2 N2			2

Table 3 - Compressor Starter

Туре	Manufacturer	Materials	UUT
Wye-Delta Closed Transition	Curtiss Wright	Carbon Stool	1
Across the line		Carbon Steel	2

Table 4 - Water Box Configuration

Tube Passes	Manufacturer	Material	UUT
2	Trane	Cast Iron	1 & 2
3	Talle	Class 35	extrapolated

Note: There is no structural between 2 pass and 3 pass

Table 5 - Unit Voltage

Model	UUT
200	1
230	interpolated
380	interpolated
400	interpolated
460	2

Table 6 - Control Panel

Manufacturer	Materials	Туро	Dimensi			
	Materials	Туре	L	W	Н	UUT
Trane	Carbon Steel	NEMA 1	88	7.5	32.5	1 & 2

Widel Line Model Number Manufacturer RTWD 80 Trane Product Construction Summary Carbon Steel Base, Carbon Steel Evaporator, Carbon Steel Condenser Options / Subcomponent Summary Evaporator: Trane ; Condenser: Trane ; Compressor Starter: Curtiss-Wright ; Control Panel: Trane Options / Subcomponent Summary Evaporator: Trane ; Condenser: Trane ; Compressor Starter: Curtiss-Wright ; Control Panel: Trane Vult Properties Weight Length Width Height F-8 S-8 V 5785 142.50 34.31 75.94 6.60 11.60 10.00 UUT Highest Passed Selsmic Run Information Building Code Test Criteria 505 (to 2.16 1.20 0.67 0.27 Test Mounting Details UUT base mounted to Qt((b) WC Shear-Fiex elastomeric pads, with Qty (b) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. Image: Field Rest Field R	HE VMC GROUP	UUT-1A									
RTWD 80 Trane Product Construction Summary Carbon Steel Evaporator, Carbon Steel Condenser Options / Subcomponent Summary Evaporator: Trane ; Condenser: Trane ; Compressor: Trane ;								V	MA-45097- <i>i</i>	4	
Product Construction Summary Carbon Steel Evaporator, Carbon Steel Condenser Options / Subcomponent Summary Evaporator: Trane ; Condenser: Trane ; Compressor Starter: Curtiss-Wright ; Control Panel: Trane UUT Properties Weight Dimensions [in] Lowest Nat. Freq. [Hz] [Ibs] Length Width Height F-B S-S V 5785 142.50 34.31 75.94 6.60 11.60 19.00 UUT Highest Passed Seismic Run Information Building Code Test Criteria Sos (g) Z/h A FLEXH (g) ARELXH (g) ARELX	Model Line Model Number								lanufacture	er	
Carbon Steel Base, Carbon Steel Evaporator, Carbon Steel Condenser Options / Subcomponent Summary Evaporator: Trane ; Condenser: Trane ; Compressor: Trane ; Compressor Starter: Curtiss-Wright ; Control Panel: Trane UUT Properties Weight Dimensions [in] Lowest Nat. Freq. [Hz] [libs] Length Width Height F-B S-S V 5785 142.50 34.31 75.94 6.60 11.60 19.00 UUT Highest Passed Seismic Run Information Building Code Test Criteria Sps (g) Z/h Ip AFIG-H (g)	RTWD 80								Trane		
Options / Subcomponent Summary Evaporator: Trane ; Compressor: Trane ; Compressor Starter: Curtiss-Wright ; Control Panel: Trane UUT Properties Weight Lowest Nat. Freq. [Hz] [Ibs] Length Width Height F-B S-S V 5785 142.50 34.31 75.94 6.60 11.60 19.00 UUT Highest Passed Seismic Run Information Building Code Test Criteria Sps (g) Z/h b AFLX.H (g) ARIG.H (g) AFLX.W (g) ARIG.Y (g) CBC 2016 ICC-ES AC156 1.00 1.0 1.00 <th c<="" td=""><td colspan="9">Product Construction Summary</td><td></td></th>	<td colspan="9">Product Construction Summary</td> <td></td>	Product Construction Summary									
UUT Properties Weight Dimensions [in] Lowest Nat. Freq. [Hz] [lbs] Length Width Height F-B S-S V 5785 142.50 34.31 75.94 6.60 11.60 19.00 UUT Highest Passed Seismic Run Information Building Code Test Criteria Sos (a) Z/h Ip AFLX-H (a) AFLX-H	Carbon Steel Base, Ca	rbon Steel	Evaporator,	, Carbon Ste	eel Condens	ser					
UUT Properties Weight Dimensions [in] Lowest Nat. Freq. [Hz] [lbs] Length Width Height F-B S-S V 5785 142.50 34.31 75.94 6.60 11.60 19.00 UUT Highest Passed Seismic Run Information Building Code Test Criteria Sos (g) Z/h Image: Passed Seismic Run Information Building Code Test Criteria Sos (g) Z/h Image: Passed Seismic Run Information Building Code Test Criteria Sos (g) Z/h Image: Passed Seismic Run Information Building Code Test Criteria Sos (g) Z/h Image: Passed Seismic Run Information Building Code Test Criteria Sos (g) Z/h Image: Passed Seismic Run Information UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. Image: Run Bolt Bolt Bolt Bolt Bolt Bolt Bolt Bolt			0	ptions / Su	bcompone	nt Summa	ry				
Weight [lbs] Lowest Nat. Freq. [Hz] Length Width Height F-B S-S V 5785 142.50 34.31 75.94 6.60 11.60 19.00 UUT Highest Passed Seismic Run Information Building Code Test Criteria Sps (g) Z/h lp AFLX-H (g) AFLX-V (g) AFLG-V (g) CBC 2016 ICC-ES AC156 1.00 1.0 1.5 1.60 1.20 0.67 0.27 Test Mounting Details UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. Image: Wide and the colspan="3">Image: Wide and the colspan="3">Wide and the colspan="3">Image: Wide and the colspan="3"	Evaporator: Trane;C	ondenser:	Trane ; Co	ompressor: 1	Γrane ; Cor	npressor S	tarter: Curtis	ss-Wright;	Control Pa	nel: Trane	
Ibs] Length Width Height F-B S-S V 5785 142.50 34.31 75.94 6.60 11.60 19.00 UUT Highest Passed Seismic Run Information Building Code Test Criteria Sps (g) Z/h le AFLX-H (g) ARIG-H (g) AFLX-V (g) ARIG-V (g) CBC 2016 ICC-ES AC156 1.00 1.0 1.5 1.60 1.20 0.67 0.27 Test Mounting Details UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. Image: State of the state of th				UL	JT Properti	es					
5785 142.50 34.31 75.94 6.60 11.60 19.00 UUT Highest Passed Seismic Run Information Building Code Test Criteria SDS (g) Z/h le AFLX+I (g) AFIG-H (g) AFIG-	Weight			Dimensi	ons [in]			Lowes	st Nat. Freq	. [Hz]	
UUT Highest Passed Seismic Run Information Building Code Test Criteria Sps (g) z/h lp AFLX-H (g) ARIG-H (g) AFLX-V (g) ARIG-V (g) CBC 2016 ICC-ES AC156 1.00 1.0 1.5 1.60 1.20 0.67 0.27 Test Mounting Details UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. Image: Colspan="2">Image: Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2" <td< td=""><td>[lbs]</td><td>Ler</td><td>ngth</td><td>Wi</td><td>dth</td><td>He</td><td>ight</td><td>F-B</td><td>S-S</td><td>V</td></td<>	[lbs]	Ler	ngth	Wi	dth	He	ight	F-B	S-S	V	
Building Code Test Criteria S _{DS (g)} Z/h Ip AFLX-H (g) AFLG-H (g) AFLX-V (g) ARIG-V (g) CBC 2016 ICC-ES AC156 1.00 1.0 1.5 1.60 1.20 0.67 0.27 Test Mounting Details UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. Image: State of the state o	5785	142	2.50	34	.31	75	.94	6.60	11.60	19.00	
CBC 2016 ICC-ES AC156 1.00 1.0 1.5 1.60 1.20 0.67 0.27 Test Mounting Details UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. Nev enlarged feet welded onto existing feet. Image: Colspan="3">Image: Colspan="3">Image: Colspan="3">Image: Colspan="3">Image: Colspan="3">Image: Colspan="3">Image: Colspan="3">Image: Colspan="3" Image: Colspan="3			UUT Hi	ighest Pass	sed Seismie	c Run Infor	mation				
Test Mounting Details UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Image: Colspan="2">Image: Colspan="2" Image: Colspan="2	Building Code	Test C	Criteria	S _{DS (g)}	z/h	l _P	A _{FLX-H (g)}	A _{RIG-H (g)}	A _{FLX-V (g)}	A _{RIG-V (g)}	
UUT base mounted to Qty (6) VMC Shear-Flex elastomeric pads, with Qty (6) 3/4" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet.	CBC 2016	ICC-ES	AC156	1.00	1.0	1.5	1.60	1.20	0.67	0.27	
enlarged feet welded onto existing feet.				Test I	Mounting D	etails					
All units were filled with contents and maintained structural integrity and functionality	enlarged feet welded o	nto existing	g feet.		2011	RTWD 80 TON	FOOT MODIFICA	TIONS		11.00 1 10 10 10 10 10 10 10 10 1	

	APPROVE	UNIT UNDER TEST (UUT) Summary Sheet					UUT-1B		
\bigcirc								MA-45097- <i>i</i>	4
Model Line	•		M	odel Numb	er		N	lanufacture	er
RTWD				80				Trane	
Product Construction Summary									
Carbon Steel Base, Ca	arbon Steel	Evaporator	, Carbon Ste	eel Condens	ser				
		0	ptions / Su	bcompone	nt Summa	ry			
Evaporator: Trane; C	Condenser: ⁻	Trane ; Co	mpressor: 1	Frane ; Cor	mpressor St	tarter: Curtis	ss-Wright;	Control Pa	nel: Trane
			UL	JT Properti	es				
Weight			Dimensi	ons [in]			Lowes	st Nat. Freq	. [Hz]
[lbs]	Len	ngth	Wi	dth	Hei	ight	F-B	S-S	V
5785	142	2.50	34	.31	75	.94	2.50	4.20	6.10
		UUT H	ighest Pass	sed Seismio	c Run Infor	mation			
Building Code	Test C	Criteria	S _{DS (g)}	z/h	I _P	A _{FLX-H (g)}	A _{RIG-H (g)}	A _{FLX-V (g)}	A _{RIG-V (g)}
CBC 2016	ICC-ES	AC156	0.80	1.0	1.5	1.28	0.96	0.53	0.21
UUT base mounted to shake table. New enla	rged feet we	elded onto e	existing feet.	RTWD	80 TON FOOT		S	nos River River Poor 7° °	olts to
A	Il units were	e filled with	contents and	d maintaine	d structural	integrity and	d functional	ity	

THE VMC GROUP		UNIT UNDER TEST (UUT) Summary Sheet					UUT-2A				
						VMA-45097-A4					
Model Line)		Μ	odel Numb	er		Manufacturer				
RTWD		250					Trane				
Product Construction Summary											
Carbon Steel Base, Carbon Steel Evaporator, Carbon Steel Condenser											
		0	ptions / Su	Ibcompone	nt Summa	ry					
Evaporator: Trane ; Condenser: Trane ; Compressor: Trane ; Compressor Starter: Curtiss-Wright ; Control Panel: Trane											
			U	UT Properti	es						
Weight			Dimensi	ons [in]			Lowest Nat. Freq. [Hz]		. [Hz]		
[lbs]	Ler	ngth	Wi	dth	Height		F-B	S-S	V		
10,070	136	6.06	47.75		76.94		11.61	7.08	19.15		
	-	UUT H	ighest Pass	sed Seismi	c Run Infor	mation					
Building Code	Test C	Criteria	S _{DS (g)}	z/h	I _P	A _{FLX-H (g)}	A _{RIG-H (g)}	A _{FLX-V (g)}	A _{RIG-V (g)}		
CBC 2016	ICC-ES	AC156	1.00	1.0 Mounting D	1.5	1.60	1.20	0.67	0.27		
UUT base mounted to New enlarged feet wel	Ided onto ex	tisting feet.			RTWD 250 TC	DN FOOT MODIF	TCATIONS		table.		
Α	All units were	e filled with	contents an	d maintaine	d structural	integrity and	d functionali	ty			

THE VME GROUP		UNIT UNDER TEST (UUT) Summary Sheet					UUT-2B				
$\mathbf{)}$								VMA-45097-A4			
Model Line			Μ	odel Numb	er		Manufacturer				
RTWD		250					Trane				
Product Construction Summary											
Carbon Steel Base, Carbon Steel Evaporator, Carbon Steel Condenser											
		C	Options / Su	bcompone	nt Summar	v					
Options / Subcomponent Summary Evaporator: Trane ; Condenser: Trane ; Compressor: Trane ; Compressor Starter: Curtiss-Wright ; Control Panel: Trane											
			U	JT Properti	es						
Weight	Weight			ons [in]			Lowest Nat. Freq. [Hz]				
[lbs]	Len	ngth	Wi	Width		Height		S-S	V		
10,070	136	6.06	47.75		76.94		3.76	2.03	5.50		
		UUT H	ighest Pass	sed Seismi	c Run Infor	mation					
Building Code	Test C	Criteria	S _{DS (g)}	z/h	I _P	A _{FLX-H (g)}	A _{RIG-H (g)}	A _{FLX-V (g)}	A _{RIG-V (g)}		
CBC 2016	ICC-ES	SAC156	0.80	1.0	1.5	1.28	0.96	0.53	0.21		
Test Mounting Details UUT base mounted to Qty (6) VMC MSSH-1E-2000 spring vibration isolators, with Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Optimized to Qty (6) VMC MSSH-1E-2000 spring vibration isolators, with Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Optimized to Qty (6) VMC MSSH-1E-2000 spring vibration isolators, with Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Optimized to Qty (6) VMC MSSH-1E-2000 spring vibration isolators, with Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Optimized to Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Optimized to Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Optimized to Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Optimized to Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Optimized to Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged feet welded onto existing feet. Optimized to Qty (24) 5/8" dia SAE Grade 8 bolts to shake table. New enlarged to Qty (24) 5/8" dia SAE Grade 8 bolts to the colspan="2">Optimized to Qty (24) 5/8" dia SAE Grade 8 bolts to the colspan="2">Optimized to Qty (24) 5/8" dia SAE Grade 8 bolts to Qty (24) 5/8" dia SAE Grade 8 bolts											
All units were filled with contents and maintained structural integrity and functionality											