JRC

Fax Transmission

No. Of pages: 7
(Including Cover Sheet)

DATE: 9/28/99 5:07 PM

TO: Tom Kennedy
Fairweather Pacific LLC

FAX: 805-658-5605

FROM: Doug Reynolds
If you do not receive all pages, please contact: Please note new area code

JET RESEARCH CENTER
3856 Weber Road
Victoria, TX. 77905-5555
Phone no. 361-580-3150
Fax no. 361-576-4707

361 - 3150

MESSAGE:

Tom,
As you can see we are back under our old name (JRC) everything is still the same, Halliburton is just giving us back our own name – about time.

I ran both open water blast using 7.2 pounds for the 4 cutters being shot at the same time (worse case) & mudburied (best case) the readings we would see will be some where in the middle toward the mudburied side. But as you can see these readings are very low in either case. Just to compare shaped charges to large bulk shots I ran numbers for a 50 pound shot at the same distance (for your use as you see fit). I talked with Dr. Dave Leidel at our Alvarado, Tx. Facility today and he said if anyone has any questions to please give him a call at 1-800-451-5403. If I can be of any further assistance give me a call anytime my new area code is now in effect (361) 580-3150.

Regards,

Doug

WORK SAFE

THINK SAFETY

K7

COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
C[illegible]ge to receiver distance (feet)	300.0
De[illegible] of submergence (feet)	36.0
Peak Overpressure (psi)	155.9
Specific impulse (psi-s)	0.079
Energy Flux Density	0.001071
Maximum Gas Bubble Radius (feet)	11.50
Period of Gas Bubble Expansion (seconds)	0.47
Blast Wave time constant (microseconds)	488.48

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	350.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	131.0
Specific impulse (psi-s)	0.067
Energy Flux Density	0.000773
Maximum Gas Bubble Radius (feet)	11.50
Period of Gas Bubble Expansion (seconds)	0.47
Blast Wave time constant (microseconds)	502.23

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[illegible]PUTATION OF OPEN WATER BLAST WAVE EFFECTS

[illegible] equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	400.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	112.7
Specific impulse (psi-s)	0.059
Energy Flux Density	0.000582
Maximum Gas Bubble Radius (feet)	11.50
Period of Gas Bubble Expansion (seconds)	0.47
Blast Wave time constant (microseconds)	514.45

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	100.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	539.7
Specific impulse (psi-s)	0.251
Energy Flux Density	0.011002
Maximum Gas Bubble Radius (feet)	11.50
Period of Gas Bubble Expansion (seconds)	0.47
Blast Wave time constant (microseconds)	400.84

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	150.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	341.3
Specific impulse (psi-s)	0.164
Energy Flux Density	0.004658
Maximum Gas Bubble Radius (feet)	11.50
Period of Gas Bubble Expansion (seconds)	0.47
Blast Wave time constant (microseconds)	431.19

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	200.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	246.6
Specific impulse (psi-s)	0.121
Energy Flux Density	0.002531
Maximum Gas Bubble Radius (feet)	11.50
Period of Gas Bubble Expansion (seconds)	0.47
Blast Wave time constant (microseconds)	454.10

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	250.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	191.6
Specific impulse (psi-s)	0.096
Energy Flux Density	0.001577
Maximum Gas Bubble Radius (feet)	11.50
Period of Gas Bubble Expansion (seconds)	0.47
Blast Wave time constant (microseconds)	472.71

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	100.0
Incident peak overpressure (psi)	173.1
Incident specific impulse (psi-s)	0.088
Blast Wave time constant (microseconds)	507.81

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	150.0
Incident peak overpressure (psi)	107.3
Incident specific impulse (psi-s)	0.056
Blast Wave time constant (microseconds)	522.43

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	200.0
Incident peak overpressure (psi)	76.4
Incident specific impulse (psi-s)	0.041
Blast Wave time constant (microseconds)	533.06

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	250.0
Incident peak overpressure (psi)	58.7
Incident specific impulse (psi-s)	0.032
Blast Wave time constant (microseconds)	541.45

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	300.0
Incident peak overpressure (psi)	47.3
Incident specific impulse (psi-s)	0.026
Blast Wave time constant (microseconds)	548.40

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	50.0
Charge to receiver distance (feet)	400.0
Incident peak overpressure (psi)	33.7
Incident specific impulse (psi-s)	0.019
Blast Wave time constant (microseconds)	559.56

COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
C[illegible]ge to receiver distance (feet)	300.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	75.2
Specific impulse (psi-s)	0.021
Energy Flux Density	0.000143
Maximum Gas Bubble Radius (feet)	6.03
Period of Gas Bubble Expansion (seconds)	0.25
Blast Wave time constant (microseconds)	287.61

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	350.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	63.1
Specific impulse (psi-s)	0.018
Energy Flux Density	0.000103
Maximum Gas Bubble Radius (feet)	6.03
Period of Gas Bubble Expansion (seconds)	0.25
Blast Wave time constant (microseconds)	295.70

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[illegible]PUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	400.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	54.3
Specific impulse (psi-s)	0.016
Energy Flux Density	0.000078
Maximum Gas Bubble Radius (feet)	6.03
Period of Gas Bubble Expansion (seconds)	0.25
Blast Wave time constant (microseconds)	302.89

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	100.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	260.1
Specific impulse (psi-s)	0.067
Energy Flux Density	0.001466
Maximum Gas Bubble Radius (feet)	6.03
Period of Gas Bubble Expansion (seconds)	0.25
Blast Wave time constant (microseconds)	236.00

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	150.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	164.5
Specific impulse (psi-s)	0.044
Energy Flux Density	0.000621
Maximum Gas Bubble Radius (feet)	6.03
Period of Gas Bubble Expansion (seconds)	0.25
Blast Wave time constant (microseconds)	253.87

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	200.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	118.8
Specific impulse (psi-s)	0.032
Energy Flux Density	0.000337
Maximum Gas Bubble Radius (feet)	6.03
Period of Gas Bubble Expansion (seconds)	0.25
Blast Wave time constant (microseconds)	267.37

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COMPUTATION OF OPEN WATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	250.0
Depth of submergence (feet)	36.0
Peak Overpressure (psi)	92.4
Specific impulse (psi-s)	0.025
Energy Flux Density	0.000210
Maximum Gas Bubble Radius (feet)	6.03
Period of Gas Bubble Expansion (seconds)	0.25
Blast Wave time constant (microseconds)	278.32

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	100.0
Incident peak overpressure (psi)	80.8
Incident specific impulse (psi-s)	0.022
Blast Wave time constant (microseconds)	278.48

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	150.0
Incident peak overpressure (psi)	50.0
Incident specific impulse (psi-s)	0.014
Blast Wave time constant (microseconds)	286.50

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	200.0
Incident peak overpressure (psi)	35.6
Incident specific impulse (psi-s)	0.010
Blast Wave time constant (microseconds)	292.32

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	250.0
Incident peak overpressure (psi)	27.4
Incident specific impulse (psi-s)	0.008
Blast Wave time constant (microseconds)	296.93

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COMPUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

TNT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	300.0
Incident peak overpressure (psi)	22.1
Incident specific impulse (psi-s)	0.007
Blast Wave time constant (microseconds)	300.74

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PUTATION OF MUDBURIED UNDERWATER BLAST WAVE EFFECTS

NT equiv. explosive weight (lbm)	7.2
Charge to receiver distance (feet)	400.0
Incident peak overpressure (psi)	15.7
Incident specific impulse (psi-s)	0.005
Blast Wave time constant (microseconds)	306.86

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