TENNESSEE VALLEY AUTHORITY	EXAMINATION SUMMARY AND RESOLUTION SHEET	REPORT NUMBER: R:P0369

PROJECT: *WBN* UNIT: *2* CYCLE *00*				COMPONENT ID: *SIF-D199-05*	
EXAMINATION METHOD				SYSTEM: SIS	ISI DWG NO: *ISI-2063-W-08* REV 5
MT ☐	PT ☐	UT ☑	VT ☐	CONFIGURATION:	CATEGORY
PROCEDURE: *N-UT-84*		REV 0	TC: N/A	*P* TO *VLV*	*B-J*

EXAMINER: Jason Nissen	EXAMINER: N	EXAMINER: N	EXAMINER: N
LEVEL: II	LEVEL: A	LEVEL: A	LEVEL: A

Total coverage calculated to be approximately 73.6%

A single sided phased array ultrasonic examination was performed to meet the requirements of ASME Section XI preservice inspection.

A phased array 1.5 MHz, 16 element probe with a 25° - 70° shear wave sector scan display was utilized to perform the examination.

A phased array 1.5 MHz, dual 15 element probe with a 40° - 70° refracted longitudinal wave sector scan display was also utilized to perform the examination.

73.6 % examination volume achieved due to valve.

A recordable indication was observed due to weld root geometry. Seen at varying amplitude 360° around the weld

RESOLUTION BY: Jason Nissen	REVIEWED BY	ANII: MAYO
LEVEL II DATE: 5-21-09	LEVEL: III DATE: 5-22-09	DATE: 6/8/09
		Page: 1 OF 7

ACCESS: FORMS DATABASE R-10/04/01

TENNESSEE VALLEY AUTHORITY	PHASED ARRAY ULTRASONIC CALIBRATION DATA SHEET	REPORT NUMBER: R-P0369

PROJECT: WBN UNIT 2 CYCLE: Ø	CALIBRATION DATE: 5-21-09
PROC.: N-UT-84 REV: Ø TC: N/A	CALIBRATION BLOCK NO.: WB-83 TEMP: 73.6F
INSTR. MFG: GEIT DUE DATE: 8-6-09	SIMULATOR BLOCK NO: N/A
MODEL/TYPE: PHASOR XS M & TE ID: E41821	THERMOMTER S/N: 562773 DUE DATE: 6-20-09
SOFTWARE REVISION: 1.2	COUPLANT Ultragel II BATCH: 06225F
EXAM TYPE: SHEAR☒ LONG☐ RL☐	EXAM: ISI☐ PSI☒ LIMITATIONS: Y☒ N☐
CABLE TYPE: 1D LENGTH: 2M #CNT: Ø	

ANGLE VERIFICATION

BLOCK TYPE: ROMPAS	S/N: 790390		NOMINAL ANGLE		ACTUAL ANGLE	
REFLECTOR			LOW: 25° HIGH: 70°		LOW: 25° HIGH: 70°	
SCAN DIRECTION	NOTCH DEPTH	SDH. DEPTH	REF. SENS/AMPL	ANGLE / METAL PATH	EXAM SENS.	
AXIAL	1.500	N/A	4.0 / 80%	50° / 2.366	25.0	
CIRCUMFERENTAIL	1.500	N/A	4.0 / 80%	50° / 2.366	30.0	

INSTRUMENT SETTINGS

GAIN TOGGLE:	dBD: Ø	dBA: 25.0

PROBE DATA		SCAN DATA	
		ELECTRONIC	SCAN PATTERN
PROBE MFG: GEIT	MODEL: 115-000-441	TYPE: Sector	ANGLE START: 25°
S/N: 01RLFK	APERTURE SIZE: .630	FOCAL POINT: unfocused	ANGLE STOP: 70°
ELEMENTS: 16	PITCH: .040	WAVE TYPE: Shear	ANGLE STEP: 1°
FREQ: 1.5	ELEVATION: .472	RL FOCAL LAW: N/A	
CONFIGURATION: ARRAY	SHAPE: RECTANGLE	LEG: 1.0	MATERIAL THICKNESS: 1.00

WEDGE DATA		APERTURE	
PROBE CHECK: ☒ PRE-EXAM ☒ POST EXAM			
WEDGE MFG: GEIT	VELOCITY: .0920	NUMBER OF STEPS: 1	FIRST ELEMENT: 1
MODEL: 360-141-161	X OFFSET: .827	APERTURE SIZE: 16	APERTURE STEP: 1
WEDGE ANGLE: 38°	Z OFFSET: .512	DISPLAY DATA	ANGLE CORRECTION ☒ON ☐OFF
CONTOUR: FLAT	ELEMENT 1 POSITION: LOW END	UT DATA	

PART DATA		BASE	PULSER	RECIEVER	NRM/TCG
MATERIAL: STAINLESS STEEL	VELOCITY: .1220	DELAY: 0.0	VOLT: 150	FREQ: BB 0.6-6.5	CYC GAIN CNTL 0.0
CALIBRATION TIMES			WIDTH: 330	ASCAN RECT: fullwave	
INITIAL TIME: 0825	FINAL TIME: 1135	MATERIAL: STAINLESS STEEL	PRF VALUE: AH		
VERF. TIMES 1000	1040 N/A	N/A			

LINEARITY CHECK

VERTICAL											
SIGNAL 1	100	90	80	70	60	50	40	30	20	10	
SIGNAL 2	50	45	40	35	30	25	20	15	10	5	

ATTENUATOR								
GAIN	SET	-6 dB	-12 dB	SET	+12	SET	+6
AMP	80	32-48	16-24	20	64-96	40	64-96
		40	20		80		80

COMMENTS:	WELDS/ITEMS EXAMINED: SIF-D199-05
	SIF-D199-06

EXAMINER:	EXAMINER: N/A	REVIEWER:	ANII:
			DATE: 6/8/09
LEVEL: II	LEVEL:	LEVEL: III DATE: 5-29-09	PG. 2 OF 7

TENNESSEE VALLEY AUTHORITY	PHASED ARRAY ULTRASONIC CALIBRATION DATA SHEET	REPORT NUMBER: R-P0369

PROJECT: WBN UNIT 2	CYCLE: Ø	CALIBRATION DATE: ~~5-21-08~~ JAN 5-21-09	
PROC.: N-UT-84	REV: Ø TC: N/A	CALIBRATION BLOCK NO.: WB 83	TEMP: 73.6F
INSTR. MFG: GEIT	DUE DATE: 8-6-09	SIMULATOR BLOCK NO: N/A	
MODEL/TYPE: PHASOR XSM	& TE ID: E41821	THERMOMTER S/N: 562793	DUE DATE: 6-20-09
SOFTWARE REVISION: 1.2		COUPLANT Ultragel II	BATCH: 06225F
EXAM TYPE: SHEAR☐ LONG☐ RL☒		EXAM: ISI☐ PSI☒	LIMITATIONS: Y☒ N☐
CABLE TYPE: 2D	LENGTH: 2M	#CNT: Ø	

ANGLE VERIFICATION

BLOCK TYPE: ROMPAS	S/N: 790390	NOMINAL ANGLE	ACTUAL ANGLE
REFLECTOR		LOW: 40° HIGH: 70°	LOW: 40° HIGH: 70°

SCAN DIRECTION	NOTCH DEPTH	SDH. DEPTH	REF. SENS/AMPL	ANGLE / METAL PATH	EXAM SENS.
AXIAL	1.500	N/A	22.0 dB/ 80%	50° / 2.363	28.0 dB
CIRCUMFERENTAIL	N/A	N/A	N/A	N/A	N/A

INSTRUMENT SETTINGS

GAIN TOGGLE:	dBD: Ø	dBA: 28.0

PROBE DATA			
PROBE MFG: GEIT	MODEL: 115-000-481		
S/N: 01TCT6	APERTURE SIZE: .748		
ELEMENTS: 2 (3×5)	PITCH: 4 × .150		
FREQ: 1.5	ELEVATION: 2 × .472		
CONFIGURATION: ARRAY	SHAPE: RECTANGLE		

SCAN DATA			
ELECTRONIC		*SCAN PATTERN*	
TYPE: Sector		ANGLE START: 40°	
FOCAL POINT: 1.000		ANGLE STOP: 70°	
WAVE TYPE: Longitudinal		ANGLE STEP: 1°	
RL FOCAL LAW: D07F100			
LEG: 1.2	MATERIAL THICKNESS: 1.000		

WEDGE DATA			
PROBE CHECK: ☒ PRE-EXAM	☒ POST EXAM		
WEDGE MFG: GEIT	VELOCITY: .0920		
MODEL: 360-151-028	X OFFSET: .591		
WEDGE ANGLE: 18°	Z OFFSET: .472		
CONTOUR: FLAT	ELEMENT 1 POSITION: LOW END		

APERTURE			
NUMBER OF STEPS: 1		FIRST ELEMENT: 1	
APERTURE SIZE: 10		APERTURE STEP: 1	
DISPLAY DATA	ANGLE CORRECTION	☒ON	☐OFF

PART DATA			
MATERIAL: Custom	VELOCITY: .2283		

CALIBRATION TIMES			
INITIAL TIME: 0840	FINAL TIME: 1140		
VERF. TIMES	1013	1104	N/A	N/A

UT DATA			
BASE	*PULSER*	*RECIEVER*	*NRM/TCG*
DELAY: 0.0	VOLT: 150	FREQ: BB 0.6-6.5	CYC GAIN CNTL 0.0
	WIDTH: 330	ASCAN RECT: Fullwave	
MATERIAL: Custom	PRF VALUE: AH		

LINEARITY CHECK

VERTICAL											
SIGNAL 1	100	90	80	70	60	50	40	30	20	10	
SIGNAL 2	50	45	40	35	30	25	20	15	10	5	

ATTENUATOR								
GAIN	SET	-6 dB	-12 dB	SET	+12	SET	+6
AMP	80	32-48	16-24	20	64-96	40	64-96
		46	20		80		80

COMMENTS:	WELDS/ITEMS EXAMINED:
	SIF-D199-05
	SIF-D199-06
	SIF-D197-03

EXAMINER:	EXAMINER:	REVIEWER:	ANII:
LEVEL: II	LEVEL: N/A	LEVEL: III DATE: 5-29-09	DATE: 6/8/09
			PG. 3 OF 7

TENNESSEE VALLEY AUTHORITY	MANUAL ULTRASONIC PIPING EXAMINATION DATA SHEET	REPORT NUMBER R.P0369

PROJECT: WBN UNIT/CYCLE 2/00
SYSTEM: SIS
WELD I.D.: SIF-D199-05
CONFIG.: P TO VLV
FLOW →

PROCEDURE: N-UT-84 REV: Ø TC: N/A
Wo REFERENCE: WELD ℄
Lo REFERENCE: TDC

EXAMINATION DATE 5-21-08
START TIME: 1002 END TIME: 1030
EXAM SURFACE ☐ID ☒OD
MATERIAL TYPE: ☐CS ☒SS ☐CSCL ☐CCSS
SURFACE TEMP.: 81.3 PYRO NO. 562773

EXAMINATION ANGLE	25°/70° DEG.	40/70 RL DEG.
AXIAL SCAN SENSITIVITY	35°/70° 25.0 dB	28.0 dB
CIRC. SCAN SENSITIVITY	25°/70° 30.0 dB	N/A dB

IND NO.	L (in) FROM REF. L1	L Max	L2	AT MAX AMP W MAX	MP MAX	D MAX	MAX AMP % DAC	EXAM NO. 3-14	NOM. ANG.	NRI	INDICATION INFORMATION: TYPE, DAMPING, ETC.
1	-2.0	+.5	+3.0	-1.05 ~~-.85~~ JN 5-21-08	1.729	.920	200%	3	59°*	☐	RL Probe/Root Geometry
								3	35°/70°	☒	
								5	25°/70°	☒	
								6	25°/70°	☒	
										☐	
										☐	

REMARKS/LIMITATIONS Examination scans performed maintaining 5-20% ID Roll. Exam was one sided due to valve.

* 59° Angle displayed the maximum amplitude within the 40°/70° RL ARRAY.

EXAMINER: [signature] LEVEL: II
EXAMINER: N/A LEVEL: N/A
REVIEWED BY: LEVEL: DATE:

ANII: [signature]
DATE: 6/8/09

PAGE 4 OF 7

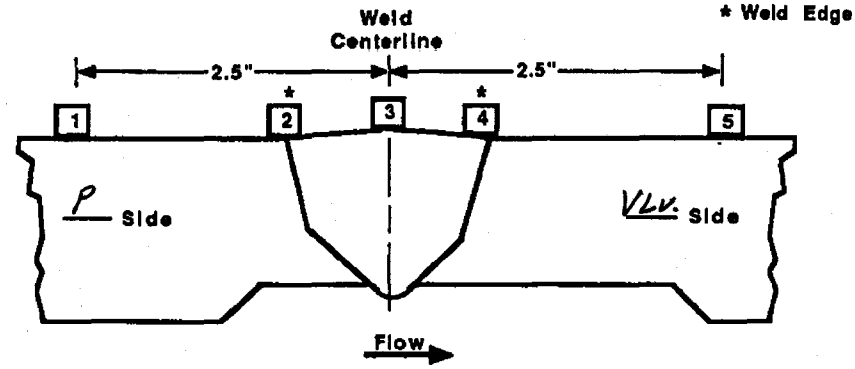
ACCESS: FORMS DATABASE 10/18/01

TVA	WALL THICKNESS PROFILE SHEET	REPORT NO: R.P0369

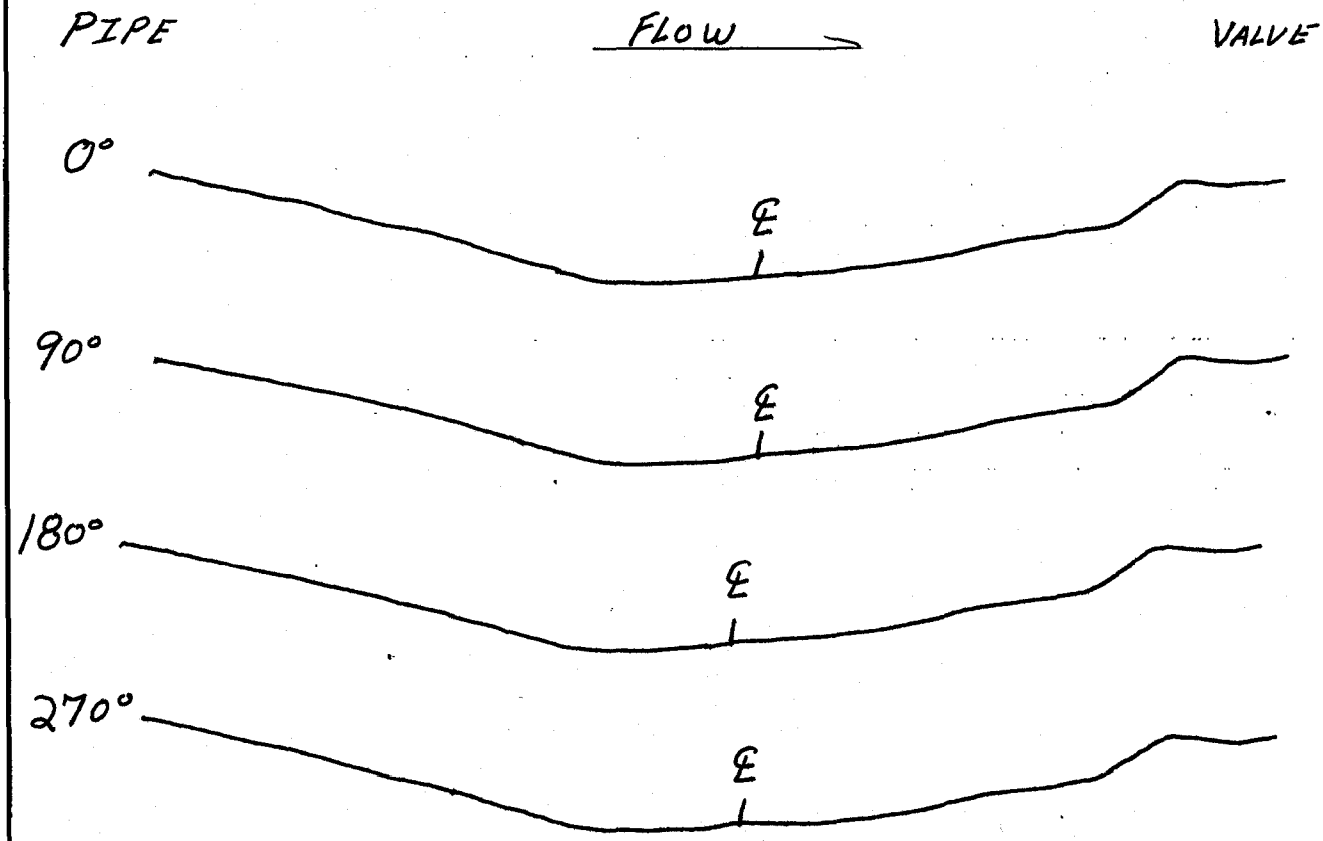
PROJECT: WATTS BAR NUCLEAR
UNIT: 2
WELD NO: SIF-0199-05
SYSTEM: SIS

Record Thickness Measurements As Indicated, Including Weld Width, Edge-To-Edge At 0°

Position	0°	90°	180°	270°
1	1.06	1.00	.950	1.03
2	1.03	.960	1.08	.980
3	1.18	1.04	1.09	1.09
4	1.42	1.20	1.49	1.32
5	NA	NA	NA	NA



CROWN HEIGHT: FLUSH
CROWN WIDTH: .875
DIAMETER: 10.0
WELD LENGTH: 36.0



EXAMINER: [signature]
LEVEL: II
DATE: 05-18-09

REVIEWED BY:
LEVEL: DATE:

ANII: [signature]
DATE: 6/8/09

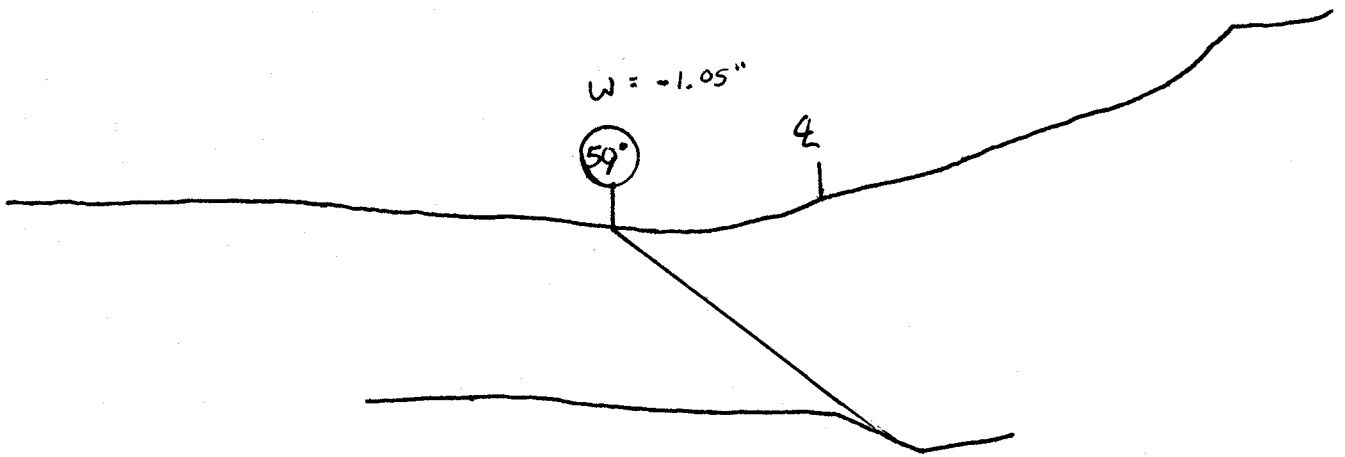
PAGE 5 OF 7

TVA 19668 (NP-5-89) 1-108-999-44

TVA Office of Nuclear Power	PROJECT: WBN SYSTEM: SIS UNIT: 2 WELD NO: SIF-D199-05	REPORT NO.: R.P0369

Indication #1 is a reflector from the weld root. This reflector can be seen intermittenly around the weld at lower amplitudes.

FLOW →



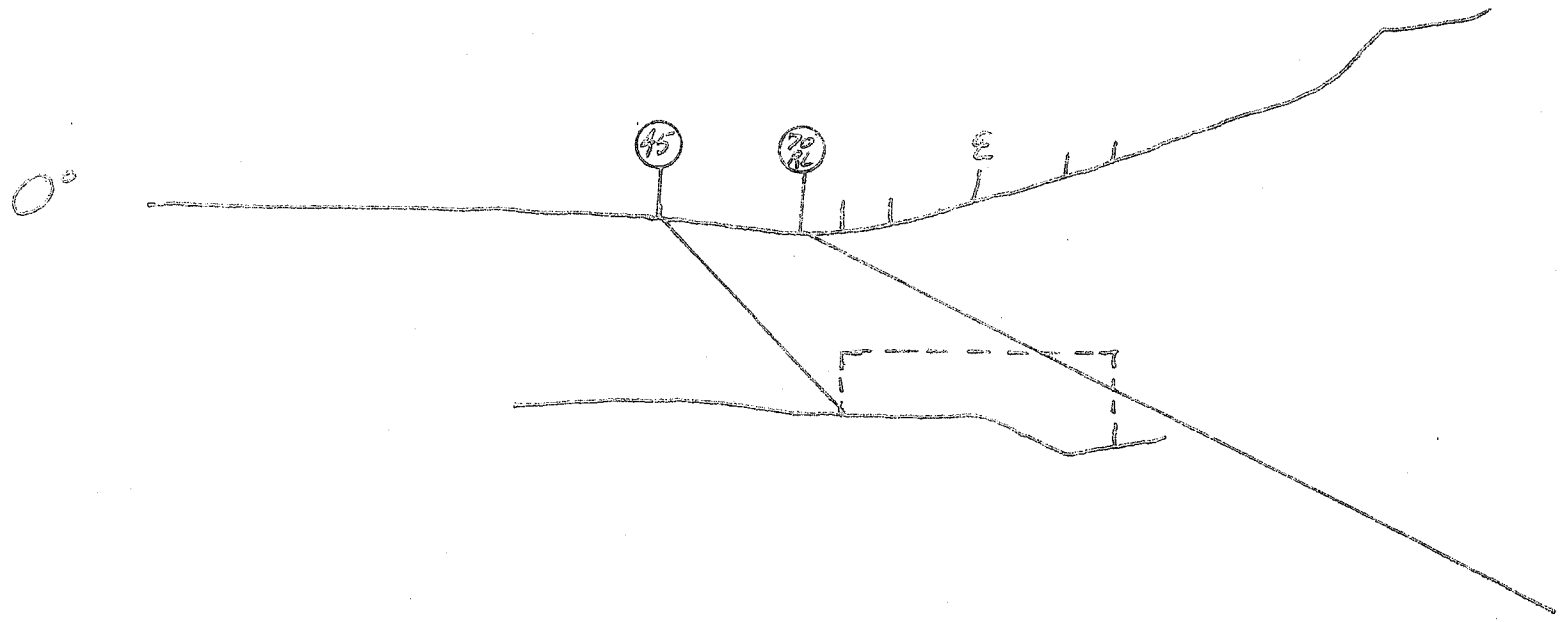
BY: [signature] LEVEL: II DATE: 5-27-08 PAGE 6 OF 7

TVA Office of Nuclear Power	PROJECT: WATTS BAR NUCLEAR SYSTEM: SIS UNIT: 2 WELD NO: SIF-D199-05	REPORT NO.: SPN 5-21-09 R.P0369 ~~T4C 0126~~

FLOW

PIPE

VALVE



Plot shown represents primary angle of 45°, phased array angles used 25°-70°, RL angles used 40°-70°

BY: Jose Alejandro LEVEL: II DATE: 05-18-09 PAGE 7 OF 7

R.P 0369

TVA Procedure
N-GP-31

weld # SIF-D199-05

Attachment 3

Item 1	Required examination Volume in sq. in. **(width x height)**	1.4	0.5		0.7
Item 2	Number of **scan directions**				4
Item 3	Total Scan **volume** in sq. in.				2.8
Item 4	Total **length** of weld				36
Item 5	Total required **exam volume** in cubic inches				100.8
Item 6	**Exam volume achieved** (sq. in.) in direction 1 X **length of weld achieved**	0.662	36		23.8
Item 7	**Exam volume achieved** (sq. in.) in direction 2 X **length of weld achieved**	0.7	36		25.2
Item 8	**Exam volume achieved** (sq. in.) in direction 3 X **length of weld achieved**	0.7	36		25.2
Item 9	**Exam volume achieved** (sq. in.) in direction 4 X **length of weld achieved**	0	36		0
Item 10	Determined the **achivied exam volume** add 6, 7, 8 & 9				74.2
Item 11	Exam **volume percentage** item 10/item 5 x 100				73.61111

one sided due to value

II
5-21-09

INFORMATION ONLY