

## CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

## NONCONFORMANCE REPORT

Project No. 20.01402.571

NCR No. <sup>Gen 2/25/2000</sup> 20-00-01

## PART 1: DESCRIPTION OF NONCONFORMANCE

Contrary to the requirements in QAP-016, Procurement Control Revision 1 (CNWRA operating procedure in effect at the time), paragraph 5.1.1, several purchase orders for C-22 welded crevice repassivation and other test specimens were placed without specific quality requirements being placed on the order (SwRI Purchase Orders to Metal Samples, Inc./Alabama Specialty Products, Inc. numbered: 982408S, 984401S, 984139S, 951110J, 983726S, 994062X, 982959S, 982518S). This nonconforming condition with the CNWRA Procurement procedure was noted during a QA review of CNWRA purchase orders. Although mill test reports, welding procedure specifications, AWS individual certifications, and weld filler materials certifications were provided from Metal Samples, Inc., and the CNWRA performed independent chemical analyses of the weld specimens, the procedural requirements for such procurements were violated. Revision 2 to QAP-016, Procurement, was issued 11/12/99 and mandated that the same requirements be listed on the Purchase Order.

Initiated by: Bruce Mabrito *Bruce Mabrito*

Date: January 12, 2000

## PART 2: PROPOSED DISPOSITION AND CORRECTIVE ACTION (Assigned to: N. Sridhar/B. Mabrito)

Disposition:

SEE ATTACHED SHEETS.

Basis of Disposition:

SEE ATTACHED SHEETS.

Action to correct nonconformance:

SEE ATTACHED SHEETS.

Proposed by: *Daniel A. Dunn*  
*Sean Brown*Target date for completion: 5/19/00

1/25/00

Date: 1/25/00

## PART 3: APPROVAL

Element Manager: *A. Sridhar* Date: 1/25/2000Director of QA: *Bruce Mabrito* Date: 1/25/2000

Comments/Instructions:

## PART 4: CLOSE OUT

Comments:

*On 4/10/2000, Dr. Sridhar presented to me his thoughts to provide close out to this NCR. Gen*

Distribution:

N. Sridhar  
Element Managers  
B. Sagar/H. Garcia  
B. Mabrito  
R. Ard/P. Maldonado (Procurement)  
Original to QA Records  
M. Ehnstrom/D. Dunn/S. Bassia

Verified by: *M. Ehnstrom*Date: 7/18/2000

PAGES 1-5 only - Supporting documents to NCR File

*As proposed on the May 30, 2000 memorandum from Dr. Sridhar to Mr. Mabrito, full radiography has been completed on the weldments supplied by Metal Samples. The radiography found no adverse conditions which would prevent the use of the samples. The radiographic report on the samples along with the acceptable results closed out Nonconformance Report 2000-01.*

**P.O. 982408S****2 of 5****Disposition:** Accept as is.

P.O. was for welded Alloy 22 repassivation potential specimens. Mill test reports for the base metal, and the weld filler metal were received from Metal Samples Inc. Duplicate chemical analyses of the base metal, filler wire and completed weld have been performed and indicate that the specimens received met the material requirements for Alloy 22 (Unified Numbering system [UNS] 06022) according to American Society for Testing and Materials (ASTM) B575. The weld was sectioned numerous times for the production of test specimens. Preparation of the specimens for testing included polishing of the sectioned weld. No voids or defects were visually observed in the sectioned welds after the specimens were prepared for testing. Additional non destructive examination of the weld will be performed using Radiographic inspection performed by a qualified vendor. The radiograph will be read by an American Society for Nondestructive Testing (ASNT) Level III examiner and the results will be posted in scientific notebook CNWRA 009. It should be noted that specimens received from Metal Samples Inc. are quite similar to the specimens received by Lawrence Livermore National Laboratory (LLNL).

**Basis of Disposition:** Independent chemical analyses indicate that the composition of the base metal, weld filler wire, and completed weld meet applicable specifications. Although the presence of voids and inclusions in the welds are not likely to alter the results of corrosion tests, a radiographic inspection of the weld will be performed.

**Action to correct nonconformance:** QA requirements will be placed on all purchase requisitions for metal test specimens. These requirements will include copies of mill test reports for the base metal and any filler metal used in welds. Independent chemical compositions will be performed using an approved supplier. Welded material will also undergo nondestructive examination using approved suppliers and ASNT qualified personnel.

**P.O. 984401S****Disposition:** Accept as is.

P.O. is for Ti grade 7 pull rod shaft. This P.O. is not for test specimens but for hardware used in autoclave testing of titanium alloy specimens. Independent chemical analyses of the material is not necessary.

**Basis of Disposition:** Item is a component in an autoclave test, not a test specimen.

**Action to correct nonconformance:** Future purchase requisitions will identify QA requirements. As requested, justification will be provided for requisitions where no QA requirements are necessary.

**P.O. 983726S**

**3 of 5**

**Disposition:** Accept as is.

P.O. is for Alloy 22 test fixtures and hardware. This P.O. is not for test specimens but for components used in for testing compact tension stress corrosion crack specimens. Independent chemical analyses of the material is not necessary.

**Basis of Disposition:** Items are fixtures, hardware, and component for stress corrosion cracking tests not a test specimens.

**Action to correct nonconformance:** Future purchase requisitions will identify QA requirements. As requested, justification will be provided for requisitions where no QA requirements are necessary.

**P.O. 994062X**

**Disposition:** Accept as is.

P.O. is for Zircalloy 4 test specimens. A copy of the mill test report for the specimens has been received from Metal Samples. Independent chemical analyses of the material will be performed.

**Basis of Disposition:** Quality requirements for specimens include a copy of the mill test report and an independent chemical analyses

**Action to correct nonconformance:** QA requirements will be placed on all purchase requisitions for metal test specimens. These requirements will include copies of mill test reports. Independent chemical compositions will be performed using an approved supplier.

**P.O. 982959S**

**Disposition:** Accept as is.

P.O. is for Type 316L double cantilever test specimens. Specimens were produced from heat P 80746 that was previously purchased by the CNWRA and qualified using an independent chemical analyses. Specimen dimensions originally specified in NACE standard TM-0177-90. Note that the NACE standard is not identified on the P.O.

**Basis of Disposition:** Material already qualified.

**Action to correct nonconformance:** QA requirements will be placed on all purchase requisitions for metal test specimens. Specimens that will be produced from material that is already qualified will be noted. Applicable standards such as NACE or ASTM will be included in the quality requirements.

**P.O. 984139S****4 of 5**

**Disposition:** Accept pending independent chemical analyses and non-destructive examination of welds.

P.O. is for specimens machined from Alloy C-22, Type 316L stainless steel, A516 grade 60 steel, including welded Alloy C-22, Type 316L stainless steel specimens. The CNWRA has received mill test reports as well as vendor (Metal Samples Inc.)-supplied chemical analyses for the materials included. All mill test reports and vendor analyses indicate that the materials meet the required ASTM specifications. No QA sensitive work has been performed using the materials on this P.O.

**Basis of Disposition:** Independent chemical analyses will be performed to verify that the materials meet the specifications listed in the appropriate ASTM specifications. Additional non destructive examination of the weld will be performed using Radiographic inspection performed by a qualified vendor. The radiograph will be read by an American Society for Nondestructive Testing (ASNT) Level III examiner and the results will be posted in applicable scientific notebook. No QA sensitive work has been initiated with the materials purchased under this purchase order as of this date and no work will be initiated until independent chemical and weld analyses have been performed.

**Action to correct nonconformance:** Include on P.O. QA requirements for mill test reports to be included as well as procedural information on welding. Include need for independent chemical analyses of the materials and non-destructive examination of welds as a prerequisite for acceptance.

**P.O. 951110J**

**Disposition:** Accept pending independent chemical analyses.

P.O. is for specimens machined from Alloy C-22, Type 316L stainless steel, Zircalloy 4 and Titanium grade 7. Mill test reports, as well as vendor (Metal Samples Inc.)-supplied chemical analyses for the materials have been received. All mill test reports and vendor analyses indicate that the materials meet the required ASTM specifications. No QA sensitive work has been performed using the materials on this P.O.

**Basis of Disposition:** Independent chemical analyses will be performed to verify that the materials meet the specifications listed in the appropriate ASTM specifications. No QA sensitive work has been initiated with the materials purchased under this purchase order as of this date and no work will be initiated until independent chemical and weld analyses have been performed.

**Action to correct nonconformance:** Include on P.O. QA requirements for mill test reports to be included with order. Include need for independent chemical analyses of the materials as a prerequisite for acceptance.

34/112

**P.O. 982518S**

**5 of 5**

**Disposition:** Accept pending independent chemical analyses and non-destructive examination of welds.

P.O. is for specimens machined from Titanium grade 7. Mill test reports, as well as vendor (Metal Samples Inc.)-supplied chemical analyses for the materials have been received. All mill test reports and vendor analyses indicate that the materials meet the required ASTM specifications.

**Basis of Disposition:** Mill test reports have been received indicating that the material meets requirements. Independent chemical analyses will be performed to verify that the material meets the appropriate ASTM specification.

**Action to correct nonconformance:** Include on P.O. QA requirements for mill test reports to be included with order. Include need for independent chemical analyses of the materials as a prerequisite for acceptance.

35/112

## Memorandum

To: Bruce Mabrito

From: Narasi Sridhar *NS*  
*5/30/00*

May 30, 2000

Copy: Darrell S. Dunn

Subject: Request for time extension to close NCR 2000-01

The closing of the subject NCR requires us to perform full radiography of the weldment made by Metal Samples. The radiography is to be performed by IHI Southwest. At present we have asked them to develop a procedure for radiography that is consistent with ANSI/ASME requirements. Once they develop this procedure and we approve it, they will complete the radiography.

Because of this, I request an extension to close this NCR until August 25, 2000.

Thank you.

*Accepted: Bruce Mabrito 5/30/2000*

36 / 112

**Subject:** CNWRA NCR 2000-01

**Date:** Tue, 30 May 2000 08:38:41 -0500

**From:** Bruce Mabrito <bmabrito@swri.edu>

**Organization:** CNWRA

**To:** "Narasi Sridhar (nsridhar)" <nsridhar@swri.edu>,

"Darrell Dunn (ddunn)" <ddunn@swri.edu>

**CC:** mehnstrom@swri.org

Sridhar,

Nonconformance Report 2000-01 was written January 12, 2000.

The NCR deals with Metal Samples Inc. and the violation of the procedural requirements for the procurement. We have stated that, among other things, we will perform non-destructive examination of the welds (radiography).

The target date for completion was 5/19/2000.

Please send me a status and reason for the delay in closing the NCR.

Bruce

37/112

NCR  
6/1/00

**Subject: Quality-Affecting Purchase Requisitions**

**Date: Fri, 21 Jan 2000 09:52:54 -0600**

**From: Bruce Mabrito <bmaibrito@swri.org>**

**Organization: CNWRA**

**To: STAFF\_GROUP <STAFF\_GROUP@gargol.cnwra.swri.edu>,  
STUDENTS\_GROUP <STUDENTS\_GROUP@gargol.cnwra.swri.edu>**

CNWRA Staff:

Effective immediately, all CNWRA Purchase Requisitions for quality-affecting materials will be reviewed by QA to ensure that there is a clause which spells out "Quality Requirements."

The purpose of this clause on purchase requisitions is to ensure the following are fully understood by the supplier:

- + Scope of work/detailed description of the goods/services required
- + Applicable codes, regulations, specifications, standards or technical requirements
- + Any certification requirements
- + Requirements for any special processes or documentation required.

These Quality Requirements are spelled out in Quality Assurance Procedure-016, Procurement. Our Financial Clerk, Roseanne Ard, will forward to QA staff any purchase requisitions which may need Quality Requirements and QA will review and approve the wording on such requisitions. CNWRA Technical staff should be proactive by inserting on the requisition any Quality Requirements such as those listed above.

Call me if you have questions about the emphasis on this current policy.

Bruce Mabrito, Director of QA, x 5149

**Subject: Restriction Placed on Metal Samples Company**

**Date:** Sun, 30 Apr 2000 21:37:04 -0500

**From:** Bruce Mabrito <bmabrito@swri.edu>

**Organization:** CNWRA

**To:** "John Greeves (jgreeves)" <jtg1@nrc.gov>,  
"C.W. (Bill) Reamer (creamer)" <cbr@nrc.gov>,  
"Larry Campbell (lcampbell)" <lrc3@nrc.gov>, RML1@nrc.gov,  
"Ted Carter (tcarter)" <thc1@nrc.gov>,  
"William Belke (wbelke)" <wlb1@nrc.gov>

**CC:** DIRS-MGRS\_GROUP <DIRS-MGRS\_GROUP@gargol.cnwra.swri.edu>

The CNWRA has studied the situation surrounding the Metal Samples Company (MSC) performance, the problems encountered by the Department of Energy, and purchase orders from the CNWRA to MSC. Based on that study, the CNWRA has put a restriction on procurements from MSC, not allowing them to provide the CNWRA with welded samples or heat treatment work. The restriction, which was imposed April 25, 2000, will not be lifted until there is objective evidence supporting such a move.

Bruce Mabrito, CNWRA Quality Assurance Director

39/112

**Subject: Fwd: Change to thw SwRI Approved Suppliers List**

**Date:** Tue, 25 Apr 2000 17:22:49 -0500

**From:** Bruce Mabrito <bmabrito@swri.edu>

**Organization:** CNWRA

**To:** STAFF\_GROUP <STAFF\_GROUP@gargol.cnwra.swri.edu>

**CC:** mehnstrom@swri.org, Randy Folck <rfolck@satx.rr.com>

*Metal  
Samples  
Packet*

CNWRA Staff:

This changes has been made to the SwRI Approved Suppliers List in accordance with a request from the CNWRA. If you have questions, please contact me.

Bruce Mabrito, CNWRA QA, ext. 5149

----- Original Message -----

**Subject:** Change to ASL

**Date:** Tue, 25 Apr 2000 17:01:51 -0500 (CDT)

**From:** SDannelly@swri.edu

**Reply-To:** SDannelly@swri.edu

**To:** bmabrito@swri.edu

The following changes have been made to the Approved Suppliers List which can be found on Institute QA's website:

**CHANGE:**

Metal Samples

Munford, AL

Added the following restriction:

No heat treat, no welding.

If you have any questions, please feel free to call me.

Sheila C. Dannelly

Institute Quality Assurance

(210) 522-3151

40/112

**Subject: Request RESTRICTION be added to MSC for Div. 20**

**Date:** Mon, 24 Apr 2000 15:25:57 -0500

**From:** Bruce Mabrito <bmabrito@swri.edu>

**Organization:** CNWRA

**To:** ddunavant@swri.org

**CC:** rweber@swri.org, ttrbovich@swri.org,  
"Narasi Sridhar (nsridhar)" <nsridhar@swri.edu>

*Metal Samples  
Company  
Folder*

To: Don Dunavant

From this morning's CNWRA meeting regarding Metal Samples Company (MSC), a decision was been made to request that SwRI QA put a restriction on the work/product provided by MSC on the SwRI Approved Supplier List.

The restriction for Div. 20 would be the following:

Restriction on welding and heat treating provided by MSC for Div. 20/CNWRA.

You can reword that to fit the needs of the SwRI ASL, but our intent is to not allow MSC to deliver welded product or heat treated product to the CNWRA while on restriction.

The restriction would apply to Div. 20 only at this time, however it is my understanding that other SwRI Divisions should become aware of this restriction (Sridhar, please pass along the word to other potential users). Our intent is to remove the restriction later this year with a directed surveillance when we learn of improvements to their quality system. The directed surveillance would be a spot check of specific criteria before the removal of the restriction, perhaps using both programmatic and technical staff.

The reason for this restriction request to SwRI QA regarding the ASL is because of a surveillance performed by the U.S. Department of Energy and problems identified with documentation and control at MSC. Since MSC produces similar product for the DOE, it is appropriate for this restriction on their products to the CNWRA.

We would appreciate you expediting this request. If you need more information, please contact me at x 5149.  
Thank you.

Bruce

Mabrito, Director of QA, Div. 20

4/1/02

**Subject:** METAL SAMPLES

**Date:** Thu, 13 Apr 2000 10:57:54 -0500

**From:** Bruce Mabrito <bmabrito@swri.edu>

**Organization:** CNWRA

**To:** "Narasi Sridhar (nsridhar)" <nsridhar@swri.edu>,

"Darrell Dunn (ddunn)" <ddunn@swri.edu>,

"Sean Brossia (sbrossia)" <sbrossia@swri.edu>

**CC:** ddunavant@swri.org, mehnstrom@swri.org

I received a call this morning from Larry Campbell of the NRC and he informed me that the DOE has put a restriction on Metal Samples for welding and heat treating. A letter has been faxed to Sridhar detailing with that information and I would like to see a copy.

Larry has asked for the CNWRA Purchase Orders and the audit of Metal Samples from us and I told him I could provide it but wanted to speak with Sridhar first. Since we have some work ongoing at Metal Samples, I am somewhat concerned about these developments, as I am sure our CLST group will be also.

At this point this is for information only, but we may have to have a meeting to determine our next actions. Bruce

Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Purchase Order: 982408S

Page: 1 of 2  
Date Printed: 01/22/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Contact: BEN

ORDER DATE		BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
02/2/99		Jimmie Silvers	NET 30	SHIPPING POINT		FED EXP P1	D.DUNN/57/6090		
LINE	ITEM/DESCRIPTION		REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	***** * CONFIRMATION * ***** This is a rated order certified for national defense use, and the contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700). *****								
1	MISC C-22 WELDED CREVICE REPASSIVATION SPECIMENS		EA	02/09/99	02/09/99		30.0000	162.5000	\$4,875.00
	Req: 479288  Prime Contract #: NRC0297009      Priority: N/A AOP: 704-000 1.20      01402.571								
2	MISC ARCHIVE SPECIMEN W/WELD WITHOUT MILLING 0.5" THICK, 4" LONG		EA	02/09/99	02/09/99		1.0000	90.0000	\$90.00
	Req: 479288  Prime Contract #: NRC0297009      Priority: N/A AOP: 704-000 1.20      01402.571								
	THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER. PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.								
	Bill To: Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510							PO Total Amt:	\$4,965.00

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**Southwest Research Institute**

6220 Culebra Road  
San Antonio, TX 78238-5166

**Purchase Order: 984401S**

Page: 1 of 2  
Date Printed: 09/14/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Contact: BENJAMIN LACKEY

ORDER DATE		BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO			
09/14/99		Jimmie Silvers	NET 30	SHIPPING POINT		BEST WAY	V. AARON/B. 90			
LINE	ITEM/DESCRIPTION				REV	U/M	DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	*****									
	* CONFIRMATION *									
	*****									
	This is a rated order certified for national defense use, and the requirements of the Defense Allocations System Regulation (15 CFR Part 700).									
1	MISC				EA	10/01/99	10/01/99	2.0000	300.0000	\$600.00
	TIGR7 PULL ROD SHAFT, PER DRAWING 20-1402-3-3-98 ATTN: BEN LACKEY @ METAL SAMPLES CO. PER QUOTE #21105									
	Req: 511604									
	Prime Contract #: NRC0297009				Priority: N/A					
	AOP: 704-000 1.20				01402.571					
	RECEIVING DO NOT INSPECT.									
	THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER. PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.									
	"IF THIS ORDER INCLUDES A GOVERNMENT CONTRACT NUMBER, THEN ANY PROPERTY FURNISHED HERewith IS CONSIDERED GOVERNMENT-FURNISHED PROPERTY WHICH MUST BE ACCOUNTED FOR IN ACCORDANCE WITH FAR, PART 45. REFER TO GENERAL PURCHASE ORDER TERMS AND CONDITIONS FOR RISK OF LOSS."									
	Bill To: Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510									
									PO Total Amt:	\$600.00

Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Purchase Order: 984401S

Page: 2 of 2  
Date Printed: 09/14/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Contact: BENJAMIN LACKEY

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
09/14/99	Jimmie Silvers	NET 30	SHIPPING POINT		BEST WAY	V. AARON/B. 90		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	Authorized Signatures							

211/ hb

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 984139S

Page: 1 of 3

Date Printed: 08/19/1999

Order To: METAL SAMPLES, INC.

ROUTE 1, BOX 152

MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Contact: BENJAMIN

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
08/18/99	Jimmie Silvers	NET 30	SHIPPING POINT		UPS RED	S. BROSSIA/BLDG. 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
***** * CONFIRMATION * ***** This is a rated order certified for national defense use, and the contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700). *****								
1	MISC C-22 SPECIMENS #CO100A110004000		EA	09/10/99	09/10/99	6.0000	6.8000	\$40.80
				Req: 507698				
	Prime Contract #: NRC0297009			Priority: N/A				
	AOP: 704-000 1.20			01402.571				
2	MISC A516Gr60 SPECIMENS #CO1002730004000		EA	09/10/99	09/10/99	6.0000	20.5000	\$123.00
				Req: 507698				
	Prime Contract #: NRC0297009			Priority: N/A				
	AOP: 704-000 1.20			01402.571				
3	MISC 316LSS SPECIMENS #CO1001590004000		EA	09/10/99	09/10/99	6.0000	3.6500	\$21.90
				Req: 507698				
	Prime Contract #: NRC0297009			Priority: N/A				
	AOP: 704-000 1.20			01402.571				
4	MISC C-22 SPECIMENS #CO181A110004000		EA	09/10/99	09/10/99	6.0000	14.3000	\$85.80
				Req: 507698				
	Prime Contract #: NRC0297009			Priority: N/A				
	AOP: 704-000 1.20			01402.571				

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Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Purchase Order: 984139S

Page: 2 of 3  
Date Printed: 08/19/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Contact: BENJAMIN

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
08/18/99	Jimmie Silvers	NET 30	SHIPPING POINT		UPS RED	S. BROSSIA/BLDG. 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
5	MISC A516Gr60 SPECIMENS #CO1812730004000  Req: 507698  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	09/10/99	09/10/99	6.0000	15.5500	\$93.30
6	MISC 316LSS SPECIMENS #CO1811590004000  Req: 507698  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	09/10/99	09/10/99	6.0000	9.6500	\$57.90
7	MISC C-22 WELDED SPECIMENS #CO181A110014000  Req: 507698  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	09/10/99	09/10/99	6.0000	20.1000	\$120.60
8	MISC A516Gr60 WELDED SPECIMENS #CO1812730014000  Req: 507698  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	09/10/99	09/10/99	6.0000	19.4500	\$116.70
9	MISC 316LSS WELDED SPECIMENS #CO1811590014000  Req: 507698		EA	09/10/99	09/10/99	6.0000	15.5000	\$93.00

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11/12

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 984139S

Page: 3 of 3

Date Printed: 08/19/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Contact: BENJAMIN

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
08/99	Jimmie Silvers	NET 30	SHIPPING POINT		UPS RED	S. BROSSIA/BLDG. 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	Prime Contract #: NRC0297009 AOP: 704-000 1.20			Priority: N/A 01402.571				
	RECEIVING DO NOT INSPECT.							
	THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER. PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.							
	"IF THIS ORDER INCLUDES A GOVERNMENT CONTRACT NUMBER, THEN ANY PROPERTY FURNISHED HERewith IS CONSIDERED GOVERNMENT-FURNISHED PROPERTY WHICH MUST BE ACCOUNTED FOR IN ACCORDANCE WITH FAR, PART 45. REFER TO GENERAL PURCHASE ORDER TERMS AND CONDITIONS FOR RISK OF LOSS."							
	Bill To: Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510							
	Authorized Signatures							
							PO Total Amt:	\$753.00

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## QUOTE

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

Phone: (256)358-4202

Fax: (256)358-4515

Quote Number: 21313

Page: 1

## Quote To:

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 8/16/1999

Expires: 9/15/1999

Reference:

Line	Part Number	Description	Date: 8/16/99	Revision	Drawing #
1	CO100A110004000	C22, MILL, S&A, ,			
Lead Time: SHIP : 2 WEEKS ARO					
HASTELLOY C22					
1/16" X 1/2" X 3", WITH A 3/16" DIAMETER HOLE, 1/4" FROM ONE END.					
		Quantity	UM	Unit Price	UM
		→ 6.00	EA @	6.80	EA
		10.00	EA @	4.80	EA
2	CO1002730004000	A516GR60, MILL, S&A, ,			
A516 GRADE 60					
1/16" X 1/2" X 3", WITH A 3/16" DIAMETER HOLE, 1/4" FROM ONE END.					
		Quantity	UM	Unit Price	UM
		→ 6.00	EA @	20.50	EA
		10.00	EA @	16.50	EA
3	CO1001590004000	316L, MILL, S&A, ,			
316L S.S.					
1/16" X 1/2" X 3", WITH A 3/16" DIAMETER HOLE, 1/4" FROM ONE END.					

Please check the above information for accuracy. Standard terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

## QUOTE

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

Phone: 358-4202

Fax: 358-4515

Quote Number: 21313

Page: 2

## Quote To:

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 8/16/1999

Expires: 9/15/1999

Reference:

Sales Person: BENJAMIN L. LACKEY

Line	Part Number	Description	Revision	Drawing #
			<u>Quantity</u> <u>UM</u>	<u>Unit Price</u> <u>UM</u>
			→ 6.00 EA @	3.65 EA
			10.00 EA @	2.65 EA
4	CO181A110004000	C22, MILL, S&A, (256)		
		HASTELLOY C22		
		1/8" X 3/4" X 2", WITH A 1/4" DIAMETER HOLE, 1/4" FROM ONE END.		
			→ 6.00 EA @	14.30 EA
			10.00 EA @	10.30 EA
5	CO1812730004000	A516GR60, MILL, S&A, ..		
		A516 GRADE 60		
		1/8" X 3/4" X 2", WITH A 1/4" DIAMETER HOLE, 1/4" FROM ONE END.		
			→ 6.00 EA @	15.55 EA
			10.00 EA @	11.55 EA

Please check the above information for accuracy. Standard terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

## QUOTE

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

Phone: (358)358-4202

Fax: (256)358-4515

Quote Number: 21313

Page: 3

## Quote To:

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 8/16/1999

Expires: 9/15/1999

Reference:

Sales Person: BENJAMIN LACKEY

Line	Part Number	Description	Revision	Drawing #												
6	CO1811590004000	316L, MILL, S&A,...														
316L S.S. 1/8" X 3/4" X 2", WITH A 1/4" DIAMETER HOLE, 1/4" FROM ONE END.																
(256																
<table><tr><th>Quantity</th><th>UM</th><th>Unit Price</th><th>UM</th></tr><tr><td>→ 6.00</td><td>EA @</td><td>9.65</td><td>EA</td></tr><tr><td>10.00</td><td>EA @</td><td>6.65</td><td>EA</td></tr></table>					Quantity	UM	Unit Price	UM	→ 6.00	EA @	9.65	EA	10.00	EA @	6.65	EA
Quantity	UM	Unit Price	UM													
→ 6.00	EA @	9.65	EA													
10.00	EA @	6.65	EA													
7	CO181A110014000	C22, MILL, AFA, S&A,...														
HASTELLOY C22, AUTOGENOUS WELD 1/8" X 3/4" X 2", WITH A 1/4" DIAMETER HOLE, 1/4" FROM ONE END.																
<table><tr><th>Quantity</th><th>UM</th><th>Unit Price</th><th>UM</th></tr><tr><td>→ 6.00</td><td>EA @</td><td>20.10</td><td>EA</td></tr><tr><td>10.00</td><td>EA @</td><td>16.10</td><td>EA</td></tr></table>					Quantity	UM	Unit Price	UM	→ 6.00	EA @	20.10	EA	10.00	EA @	16.10	EA
Quantity	UM	Unit Price	UM													
→ 6.00	EA @	20.10	EA													
10.00	EA @	16.10	EA													
8	CO1812730014000	A516GR60, MILL, AFA, S&A,...														
A516 GRADE 60, AUTOGENOUS WELD 1/8" X 3/4" X 2", WITH A 1/4" DIAMETER HOLE, 1/4" FROM ONE END.																

Please check the above information for accuracy. Standard terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

**QUOTE**

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

P: (256)358-4202

Fax: (256)358-4515

Quote Number: 21313

Page: 4

**Quote To:**

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 8/16/1999

Expires: 9/15/1999

Reference:

Sales Person: BENJAMIN J. LACKEY

Line	Part Number	Description	Revision	Drawing #
			<u>Quantity</u> <u>UM</u>	<u>Unit Price</u> <u>UM</u>
			→ 6.00 EA @	19.45 EA
			10.00 EA @	15.45 EA
Phone:				
9	CO1811590014000	316L, MILL, AFA, S&A, ...		
316L S.S., AUTOGENOUS WELD				
1/8" X 3/4" X 2", WITH A 1/4" DIAMETER HOLE, 1/4" FROM ONE END.				
			<u>Quantity</u> <u>UM</u>	<u>Unit Price</u> <u>UM</u>
			→ 6.00 EA @	15.50 EA
			10.00 EA @	11.50 EA

Please check the above information for accuracy. Standard terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

## QUOTE

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

Phone: 256)358-4202

Fax: 256)358-4515

Quote Number: 21313

Page: 5

## Quote To:

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 8/16/1999

Expires: 9/15/1999

Reference:

Sales Person: BENJAMIN J. LACKEY

Line	Part Number	Description	Revision	Drawing #
------	-------------	-------------	----------	-----------

ALL OF THE ABOVE QUOTED COUPONS WILL BE LEFT WITH THE "MILL"  
SURFACE FINISH (SURFACE AS RECEIVED FROM THE MATERIAL  
MANUFACTURER).

PLEASE NOTE : THE PART# C0181 COUPONS HAVE THE SAME OUTSIDE  
DIMENSIONS AS THE PART 131, BUT THE HOLE SIZE AND PLACEMENT ARE PER  
OUR DISCUSSION ON FRIDAY, 13 AUG 99.

(2)

ALL ITEMS CAN BE SHIPPED COMPLETE, 2 WEEKS AFTER RECEIPT OF ORDER.

THANK YOU FOR YOUR INQUIRY. IF YOU HAVE ANY QUESTIONS, PLEASE LET US  
KNOW.

Please check the above information for accuracy. Standard  
terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 951110J

Page: 1 of 2

Date Printed: 07/20/1999

Order To: METAL SAMPLES, INC.  
 ROUTE 1, BOX 152  
 MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute  
 6220 Culebra Road  
 San Antonio, TX 78238-5166

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO	
07/9/99	Jesse Lozano	NET 30	SHIPPING POINT		FED EX P1	S. BROSSIA/BLDG. 57	
LINE	ITEM/DESCRIPTION	REV	U/M	DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	***** * CONFIRMATION * ***** This is a rated order certified for national defense use, and the contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700). *****						
1	MISC TiGr7 0.040" DIA. X 12" LONG ROD  Req: 505816  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	07/30/99 07/15/99  Priority: N/A 01402.571	6.0000	155.0000	\$930.00
2	MISC ALLOY C-22 0.040" DIA. X 12" LONG ROD  Req: 505816  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	07/30/99 07/15/99  Priority: N/A 01402.571	6.0000	145.0000	\$870.00
3	MISC TYPE 316L 0.040" DIA. X 12" LONG ROD  Req: 505816  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	07/30/99 07/15/99  Priority: N/A 01402.571	6.0000	35.0000	\$210.00
4	MISC Zr4 0.040" DIA. X 12" LONG ROD  Req: 505816  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	07/30/99 07/15/99  Priority: N/A 01402.571	6.0000	165.0000	\$990.00

51/112

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 951110J

Page: 2 of 2

Date Printed: 07/20/1999

Order To: METAL SAMPLES, INC.

104367

ROUTE 1, BOX 152

MUNFORD, AL 36268

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
07 '9/99	Jesse Lozano	NET 30	SHIPPING POINT		FED EX P1	S. BROSSIA/BLDG. 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER. PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.  "IF THIS ORDER INCLUDES A GOVERNMENT CONTRACT NUMBER; THEN ANY PROPERTY FURNISHED HEREWITH IS CONSIDERED GOVERNMENT-FURNISHED PROPERTY WHICH MUST BE ACCOUNTED FOR IN ACCORDANCE WITH FAR, PART 45. REFER TO GENERAL PURCHASE ORDER TERMS AND CONDITIONS FOR RISK OF LOSS."  Bill To: Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510  <div>Authorized Signatures</div>							
							PO Total Amt:	\$3,000.00

52/11/2

## QUOTE

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

Phone: (256)358-4202

Fax: (256)358-4515

Quote Number: 20722

Page: 1

## Quote To:

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 6/25/99

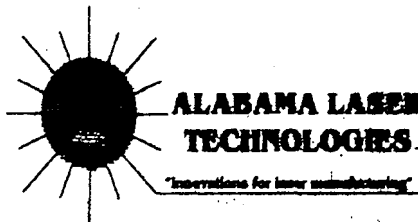
Expires: 7/25/99

Reference:

Sales Person: BENJAMIN I. LACKEY

Line	Part Number	Description	Revision	Drawing #
* 1	CU01482	TIGR7 0.040"DIA X 12"LONG WIRE SPECIMEN		
Lead Time: SHIP : 2 WEEKS ARO				
MACHINED FROM 1/8" THICK SHEET STOCK.				
		<u>Quantity</u> <u>UM</u>	<u>Unit Price</u>	<u>UM</u>
		6.00 EA @	155.00	EA
2	CU01482	TIGR7 0.080"DIA X 12"LONG WIRE SPECIMEN		
MACHINED FROM 1/8" THICK SHEET STOCK.				
		<u>Quantity</u> <u>UM</u>	<u>Unit Price</u>	<u>UM</u>
		6.00 EA @	140.00	EA
3	CU01482	I625 0.040"DIA X 12"LONG WIRE SPECIMEN		
MACHINED FROM 0.062" DIAMETER ROUND/WIRE STOCK.				
		<u>Quantity</u> <u>UM</u>	<u>Unit Price</u>	<u>UM</u>
		6.00 EA @	65.00	EA

Please check the above information for accuracy. Standard terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

**QUOTE**

Metal Samples Company

P.O. Box 8  
152 Metal Samples Road  
Munford, AL 36268

Phone: (256)358-4202

Fax: (256)358-4515

Quote Number: 20722

Page: 2

**Quote To:**

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 6/25/99

Expires: 7/25/99

Reference:

Sales Person: BENJAMIN J. LAGKEY

Line	Part Number	Description	Revision	Drawing #
4	CU01482	I625 0.062"DIA X 12"LONG WIRE SPECIMEN  0.062" DIAMETER WIRE, CUT TO LENGTH.		
			<u>Quantity</u> <u>UM</u>	<u>Unit Price</u> <u>UM</u>
			6.00 EA @	45.00 EA
5	CU01482	I625 0.080"DIA X 12"LONG WIRE SPECIMEN  MACHINED FROM 1/8" THICK SHEET STOCK.		
			<u>Quantity</u> <u>UM</u>	<u>Unit Price</u> <u>UM</u>
			6.00 EA @	130.00 EA
* 6	CU01482	C22 0.040"DIA X 12"LONG WIRE SPECIMEN  MACHINED FROM 1/8" THICK SHEET STOCK.		
			<u>Quantity</u> <u>UM</u>	<u>Unit Price</u> <u>UM</u>
			6.00 EA @	145.00 EA

Please check the above information for accuracy. Standard  
terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

## QUOTE

54/112

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

Phone: (256)358-4202

Fax: (256)358-4515

Quote Number: 20722

Page: 3

## Quote To:

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 6/25/99

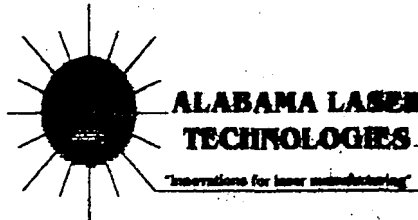
Expires: 7/25/99

Reference:

Sales Person: BENJAMIN J. LACKEY

Line	Part Number	Description	Revision	Drawing #
7	CU01482	C22 0.080"DIA X 12"LONG WIRE SPECIMEN  MACHINED FROM 1/8" THICK SHEET STOCK.		
		Quantity UM	Unit Price	UM
		6.00 EA @	130.00	EA
8	CU01482	316L NUCLEAR 0.040"DIA X 7"LONG WIRE SPECIMEN  MACHINED FROM 1/4" THICK PLATE STOCK. *NOTE -- 7" MAXIMUM LENGTH.		
		Quantity UM	Unit Price	UM
		10.00 EA @	155.00	EA
9	CU01482	316L NUCLEAR 0.080"DIA X 7"LONG WIRE SPECIMEN  MACHINED FROM 1/4" THICK PLATE STOCK. *NOTE -- 7" MAXIMUM LENGTH.		
		Quantity UM	Unit Price	UM
		10.00 EA @	140.00	EA

Please check the above information for accuracy. Standard terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

**QUOTE**

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

Phone: (256)358-4202

Fax: (256)358-4515

Quote Number: 20722

Page: 4

**Quote To:**

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 6/25/99

Expires: 7/25/99

Reference:

Sales Person: BENJAMIN J. LACKEY

Line	Part Number	Description	Revision	Drawing #
* 10	CU01482	316L 0.040"DIA X 12"LONG WIRE SPECIMEN  0.046" DIAMETER WIRE, CUT TO LENGTH.		
		<u>Quantity</u> <u>UM</u>	<u>Unit Price</u>	<u>UM</u>
		6.00 EA @	35.00	EA
11	CU01482	316L 0.080"DIA X 12"LONG WIRE SPECIMEN  MACHINED FROM 1/8" THICK SHEET STOCK.		
		<u>Quantity</u> <u>UM</u>	<u>Unit Price</u>	<u>UM</u>
		6.00 EA @	45.00	EA
12	CU01482	304L 0.040"DIA X 12"LONG WIRE SPECIMEN  MACHINED FROM 0.062" DIAMETER ROUND/WIRE STOCK.		
		<u>Quantity</u> <u>UM</u>	<u>Unit Price</u>	<u>UM</u>
		6.00 EA @	45.00	EA

Please check the above information for accuracy. Standard  
terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

## QUOTE

55/112

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

Phone: (256)358-4202

Fax: (256)358-4515

Quote Number: 20722

Page: 5

## Quote To:

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 6/25/99

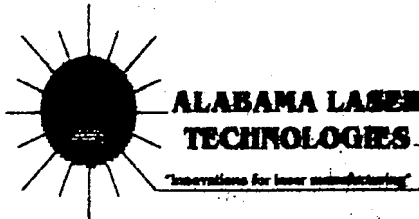
Expires: 7/25/99

Reference:

Sales Person: BENJAMIN J. LACKEY

Line	Part Number	Description	Revision	Drawing #
13	CU01482	304L 0.062"DIA X 12"LONG WIRE SPECIMEN  <i>0.062" DIAMETER WIRE, CUT TO LENGTH.</i>		
			<u>Quantity</u> <u>UM</u>	<u>Unit Price</u> <u>UM</u>
			6.00 EA @	35.00 EA
14	CU01482	304L 0.080"DIA X 12"LONG WIRE SPECIMEN  <i>MACHINED FROM 1/8" THICK SHEET STOCK.</i>		
			<u>Quantity</u> <u>UM</u>	<u>Unit Price</u> <u>UM</u>
			6.00 EA @	45.00 EA
*15	CU01482	ZR4 0.040"DIA X 12"LONG WIRE SPECIMEN  <i>MACHINED FROM 1/4" THICK PLATE STOCK.</i>		
			<u>Quantity</u> <u>UM</u>	<u>Unit Price</u> <u>UM</u>
			6.00 EA @	165.00 EA

Please check the above information for accuracy. Standard  
terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

**QUOTE**

Metal Samples Company

P.O. Box 8

152 Metal Samples Road

Munford, AL 36268

Phone: (256)358-4202

Fax: (256)358-4515

Quote Number: 20722

Page: 6

**Quote To:**

SEAN BROSSIA  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 6/25/99

Expires: 7/25/99

Reference:

Sales Person: BENJAMIN J. LACKEY

Line	Part Number	Description	Revision	Drawing #
16	CU01482	ZR4 0.080"DIA X 12"LONG WIRE SPECIMEN		
MACHINED FROM 1/4" THICK PLATE STOCK.				
		<u>Quantity</u> <u>UM</u>	<u>Unit Price</u>	<u>UM</u>
		6.00 EA @	150.00	EA

AVAILABLE TO SHIP 2 WEEKS AFTER RECEIPT OF ORDER.

THANK YOU FOR YOUR INQUIRY. IF YOU HAVE ANY QUESTIONS, PLEASE LET US  
KNOW.

Please check the above information for accuracy. Standard  
terms and conditions apply if this quote becomes an order.



ALABAMA  
RESEARCH AND  
DEVELOPMENT

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 983726S

Page: 1 of 3

Date Printed: 06/29/1999

Order To: METAL SAMPLES, INC.

ROUTE 1, BOX 152

MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Contact: MONICA

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
06/28/99	Jimmie Silvers	NET 30	SHIPPING POINT		BEST WAY	V. AARON/BLDG. 90		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	This is a rated order certified for national defense use, and the contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700).							
1	MISC SEAL PLATE, PER DRAWING #1402-04		EA	07/28/99	07/28/99	2.0000	165.0000	\$330.00
	Req: 455197							
	Prime Contract #: NRC0297009		Priority: N/A					
	AOP: 704-000 1.20		01402.571					
2	MISC CLEVIS PIN, PER DRAWING #1402-06		EA	07/28/99	07/28/99	5.0000	62.0000	\$310.00
	Req: 455197							
	Prime Contract #: NRC0297009		Priority: N/A					
	AOP: 704-000 1.20		01402.571					
3	MISC LOWER PULL ROD, PER DRAWING #1402-08		EA	07/28/99	07/28/99	2.0000	250.0000	\$500.00
	Req: 455197							
	Prime Contract #: NRC0297009		Priority: N/A					
	AOP: 704-000 1.20		01402.571					
4	MISC UPPER PULL ROD, PER DRAWING #1402-03		EA	07/28/99	07/28/99	2.0000	250.0000	\$500.00
	Req: 455197							
	Prime Contract #: NRC0297009		Priority: N/A					
	AOP: 704-000 1.20		01402.571					
5	MISC SUMP SEAL BOX, PER DRAWING #1402-12		EA	07/28/99	07/28/99	2.0000	486.0000	\$972.00

56/111

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 983726S

Page: 2 of 3

Date Printed: 06/29/1999

Order To: METAL SAMPLES, INC.

104367

ROUTE 1, BOX 152

MUNFORD, AL 36268

Contact: MONICA

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
06/28/99	Jimmie Silvers	NET 30	SHIPPING POINT		BEST WAY	V. AARON/BLDG. 90		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	Req: 455197							
	Prime Contract #: NRC0297009			Priority: N/A				
	AOP: 704-000 1.20			01402.571				
6	MISC		EA	07/28/99	07/28/99	2.0000	199.9500	\$399.90
	CLAMPING NUT, PER DRAWING #1402-11							
	Req: 455197							
	Prime Contract #: NRC0297009			Priority: N/A				
	AOP: 704-000 1.20			01402.571				
7	MISC		EA	07/28/99	07/28/99	2.0000	157.9500	\$315.90
	LOAD TRAIN ADAPTER, PER DRAWING #1402-10							
	Req: 455197							
	Prime Contract #: NRC0297009			Priority: N/A				
	AOP: 704-000 1.20			01402.571				
	PER QUOTE #20451 DATED 5/31/99							
	RECEIVING DO NOT INSPECT.							
	THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER.							
	PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.							
	"IF THIS ORDER INCLUDES A GOVERNMENT CONTRACT NUMBER, THEN ANY PROPERTY FURNISHED HERewith IS CONSIDERED GOVERNMENT-FURNISHED PROPERTY WHICH MUST BE ACCOUNTED FOR IN ACCORDANCE WITH FAR, PART 45. REFER TO GENERAL PURCHASE ORDER TERMS AND CONDITIONS FOR RISK OF LOSS."							

57/112

57/112

Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Purchase Order: 983726S

Page: 3 of 3  
Date Printed: 06/29/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Contact: MONICA

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO	
0' 8/99	Jimmie Silvers	NET 30	SHIPPING POINT		BEST WAY	V. AARON/BLDG. 90	
LINE	ITEM/DESCRIPTION	REV	DUE U/M DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	Bill To: Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510					PO Total Amt:	\$3,327.80
	Authorized Signatures						

58/112

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 994062X

Page: 1 of 2

Date Printed: 04/14/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Contact: BENJAMIN LACKEY

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
04/99	Adolfo Puente	NET 30	SHIPPING POINT		UPS NEXT DAY AI	D. DUNN/BLDG. 57-X6090		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	***** * CONFIRMATION * ***** This is a rated order certified for national defense use, and the contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700). *****							
1	MISC ZIRCALLOY 4REPASSIVATION SPECIMENS		EA	05/01/99	05/01/99	30.0000	145.0000	\$4,350.00
	Req: 991188							
	Prime Contract #: NRC0297009                      Priority: N/A AOP: 704-000 1.20                                      01402.571							
	PLEASE RUSH!!							
	THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER. PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.							
	"IF THIS ORDER INCLUDES A GOVERNMENT CONTRACT NUMBER, THEN ANY PROPERTY FURNISHED HERewith IS CONSIDERED GOVERNMENT-FURNISHED PROPERTY WHICH MUST BE ACCOUNTED FOR IN ACCORDANCE WITH FAR, PART 45. REFER TO GENERAL PURCHASE ORDER TERMS AND CONDITIONS FOR RISK OF LOSS."							
	Bill To: Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510							
							PO Total Amt:	\$4,350.00

59  
2/1/12

**Southwest Research Institute**

6220 Culebra Road

San Antonio, TX 78238-5166

**Purchase Order: 994062X**

Page: 2 of 2

Date Printed: 04/14/1999

 Order To: METAL SAMPLES, INC.  
 ROUTE 1, BOX 152  
 MUNFORD, AL 36268

104367

Contact: BENJAMIN LACKEY

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
04/99	Adolfo Puente	NET 30	SHIPPING POINT		UPS NEXT DAY AI	D. DUNN/BLDG. 57-X6090		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	Authorized Signatures							

60/11/2

61/112

***Justification for Other Than Full and Open Competition***

**Date:** 4/8/99  
**To:** Purchasing Department  
**From:** Darrell S. Dunn  
**SUBJECT:** Sole Source Justification  
Purchase Requisition: 991188  
Project No.: 20-1402-571  
Recommended Source: Metal Samples

=====  
This form must be completed and returned to Purchasing before your Purchase Requisition can be awarded.

1. Is the recommended source the only source you considered?  
☒ Yes ☐ No

a. If you check yes, why didn't you consider any other sources?  
Metal Samples has, in the past, consistently provided specimens meeting the quality assurance requirements, in a timely manner at a competitive price. Since the specimens will be used during an NRC staff exchange starting 5/1/99, obtaining acceptable specimens in a timely manner is critical to the success of the project.

- b. If you checked no, what other sources did you consider?

How did you determine that the recommended source was the only source? (Include any market survey conducted, as well as review of technical journals and other sources such as the Thomas Register.)

Why were these other sources ruled out for this purchase?

2. What characteristics does this item/company have that are necessary, and that no other item/company has?  
Metal Samples has the ability to produce the type of test specimens required from the material of interest.

3. Remarks:

I certify that this justification is accurate and complete to the best of my knowledge.

Purchase Requisition Requester:



62/112

# CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

JUSTIFICATION FOR ITEMS ON PURCHASE REQUISITION NUMBER: 991188

SUGGESTED VENDOR: (If Applicable) Metal Samples

Item:

A: Zircalloy 4 Crevice repassivation specimens: Necessary to conduct investigations focused on the degradation of zircalloy cladding

Item:

Item

Item

  
SIGNATURE

4/8/99  
DATE

## QUOTE

63/112

Metal Samples Company  
P.O. Box 8  
152 Metal Samples Road  
Munford, AL 36268

Phone: (256)358-4202  
Fax: (256)358-4515

Quote Number: 1568  
Page: 1

Quote To:  
DARRELL DUNN  
SOUTHWEST RESEARCH INSTITUTE  
P.O. BOX 28510  
SAN ANTONIO TX 78228-0510  
USA

Date: 4/2/99  
Expires: 5/2/99

Reference

Sales Person: BENJAMIN J. LACKEY

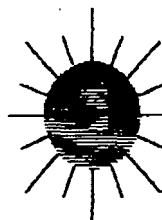
Line	Part Number	Description	Revision	Drawing #
1	CU014820058	ZR4 CREVICE REPASS SPEC		
Lead Time: SHIP : 2-3 WEEKS ARO				
ZIRCALLOY 4 CREVICE REPASSIVATION SPECIMEN, PER SwRI				
DRAWING.				
0.500" THICK				
MANUFACTURED FROM 0.578" X 3" FLAT BAR, METAL SAMPLES LOT#				
E350.				
		Quantity UM	Unit Price	UM
		10.00 EA @	155.00	EA
		30.00 EA @	145.00	EA

AVAILABLE TO SHIP 2-3 WEEKS AFTER RECEIPT OF ORDER.

ZIRCALLOY 4, LOT# E350 - MTR TO FOLLOW.

THANK YOU FOR YOUR INQUIRY. IF YOU HAVE ANY QUESTIONS, PLEASE LET US KNOW.

Please check the above information for accuracy. Standard terms and conditions apply if this quote becomes an order.



ALABAMA LASER TECHNOLOGIES

Innovations for laser manufacturing



ALABAMA RESEARCH AND DEVELOPMENT

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## Southwest Research Institute

6220 Culebra Road  
San Antonio, TX 78238-5166

Purchase Order: 982959S

Page: 1 of 2  
Date Printed: 03/29/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Contact: BYRON ADAMS

ORDER DATE		BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO	
03/29/99		Jimmie Silvers	NET 30	SHIPPING POINT		FED EXP P1	YI-MING PAN/B 57	
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	This is a rated order certified for national defense use, and the contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700).							
1	MISC 316L SS DCB SPECIMENS, DRAWING #152706 FROM A 7" X 7" X 1/2" PLATE, HEAT NO. P80746 SUPPLIED BY SWRI. SPECIMEN ORIENTATION IN T-L DIRECTION			PCS 04/14/99	04/14/99	4.0000	315.0000	\$1,260.00
	Req: 471683							
	Prime Contract #: NRC0297009 AOP: 704-000 1.20			Priority: N/A 01402.571				
2	MISC 316 LSS DCB LOADING WEDGES FROM ABOVE PLATE, DRAWING #AAA 96-101220-00			PCS 04/14/99	04/14/99	4.0000	22.0000	\$88.00
	Req: 471683							
	Prime Contract #: NRC0297009 AOP: 704-000 1.20			Priority: N/A 01402.571				
	THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER. PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.							
	"IF THIS ORDER INCLUDES A GOVERNMENT CONTRACT NUMBER, THEN ANY PROPERTY FURNISHED HEREWITH IS CONSIDERED GOVERNMENT-FURNISHED PROPERTY WHICH MUST BE ACCOUNTED FOR IN ACCORDANCE WITH FAR, PART 45. REFER TO GENERAL PURCHASE ORDER TERMS AND CONDITIONS FOR RISK OF LOSS."							
	Bill To:							

69/112

69/112

**Southwest Research Institute**

6220 Culebra Road

San Antonio, TX 78238-5166

**Purchase Order: 982959S**

Page: 2 of 2

Date Printed: 03/29/1999

Order To: METAL SAMPLES, INC.

104367

ROUTE 1, BOX 152

MUNFORD, AL 36268

Contact: BYRON ADAMS

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
03/29/99	Jimmie Silvers	NET 30	SHIPPING POINT		FED EXP P1	YI-MING PAN/B 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510						PO Total Amt:	\$1,348.00
	<div>Authorized Signatures</div>							

65/112

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order No: 982518S

Change Order No: 1

Page: 1 of 2

Date Printed: 02/12/1999

Change Date: 02/11/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Contact: BEN LACKEY

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
0 8/99	Silvers Jimmie	NET 30	SHIPPING POINT		N/A	SEAN BROSSIA/BLDG. 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DATE	DATE	QUANTITY	NET UNIT COST	EXTENDED COS.
	***** * CONFIRMATION * * DUPLICATE PO * ***** This is a rated order certified for national defense use, and the contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700).  (3) ITEM 1 WILL BE HELD IN STOCK BY METAL SAMPLES TO BE CUT INTO SPECIMENS AS REQUIRED BY THE PROJECT AND WILL NOT BE SHIPPED TO SWRI.  ***** FROM: *****							
1	MISC 1" x 24" x 48" TITANIUM GRADE 7 PLATE PART #018081000X24X48		EA	02/26/99	02/26/99	1.0000	8,055.0000	\$8,055.00
	Req: 479289  Prime Contract #: NRC0297009      Priority: N/A AOP: 704-000 1.20      01402.571							
	***** TO: *****							
1	MISC 1" x 24" x 48" TITANIUM GRADE 7 PLATE PART #018081000X24X48		EA	02/26/99	02/26/99	1.0000	5,700.0000	\$5,700.00
	Req: 479289  Prime Contract #: NRC0297009      Priority: N/A AOP: 704-000 1.20      01402.571							
	RECEIVING DO NOT INSPECT.							
	Line Net Change:							\$-2,355.00

Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166

Purchase Order No: 982518S

Change Order No: 1

Page: 2 of 2  
Date Printed: 02/12/1999  
Change Date: 02/11/1999

Order To: METAL SAMPLES, INC.  
ROUTE 1, BOX 152  
MUNFORD, AL 36268

104367

Contact: BEN LACKEY

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
0 8/99	Silvers Jimmie	NET 30	SHIPPING POINT		N/A	SEAN BROSSIA/BLDG. 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER. PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.							
	"IF THIS ORDER INCLUDES A GOVERNMENT CONTRACT NUMBER, THEN ANY PROPERTY FURNISHED HERewith IS CONSIDERED GOVERNMENT-FURNISHED PROPERTY WHICH MUST BE ACCOUNTED FOR IN ACCORDANCE WITH FAR, PART 45. REFER TO GENERAL PURCHASE ORDER TERMS AND CONDITIONS FOR RISK OF LOSS."							
	Bill To: Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510						PO Total Amt:	\$19,804.00
							PO Net Change:	\$-2,355.00
	<div>Authorized Signature</div>							

67/12

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 982518S

Page: 1 of 3

Date Printed: 02/08/1999

Order To: METAL SAMPLES, INC.  
 ROUTE 1, BOX 152  
 MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute  
 6220 Culebra Road  
 San Antonio, TX 78238-5166

Contact: BEN LACKEY

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
02 /99	Jimmie Silvers	NET 30	SHIPPING POINT		N/A	SEAN BROSSIA/BLDG. 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
***** * CONFIRMATION * ***** This is a rated order certified for national defense use, and the contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700). *****								
1	MISC 1" x 24" x 48" TITANIUM GRADE 7 PLATE PART #018081000X24X48 Req: 479289  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	02/26/99	02/26/99	1.0000	8,055.0000	\$8,055.00
				Priority: N/A 01402.571				
2	MISC CPP ELECTRODE #CU01482  Req: 479289 Ship Via: FED EXP P1  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	02/26/99	02/26/99	40.0000	32.6000	\$1,304.00
				Priority: N/A 01402.571				
3	MISC CREVICE REPASSIVATION SAMPLES #CU014820058  Req: 479289 Ship Via: FED EXP P1  Prime Contract #: NRC0297009 AOP: 704-000 1.20		EA	02/26/99	02/26/99	35.0000	135.0000	\$4,725.00
				Priority: N/A 01402.571				
4	MISC WELDED CREVICE REPASSIVATION SAMPLES #CU014820109  Req: 479289 Ship Via: FED EXP P1		EA	02/26/99	02/26/99	35.0000	225.0000	\$7,875.00

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 982518S

Page: 2 of 3

Date Printed: 02/08/1999

Order To: METAL SAMPLES, INC.

104367

ROUTE 1, BOX 152

MUNFORD, AL 36268

Contact: BEN LACKEY

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
0. 8/99	Jimmie Silvers	NET 30	SHIPPING POINT		N/A	SEAN BROSSIA/BLDG. 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COS.
5	Prime Contract #: NRC0297009 AOP: 704-000 1.20  MISC WELD ARCHIVE SAMPLE #CU014829999  Priority: N/A 01402.571  EA 02/26/99 02/26/99  Req: 479289 Ship Via: FED EXP P1					1.0000	135.0000	\$135.00
6	Prime Contract #: NRC0297009 AOP: 704-000 1.20  MISC ARCHIVE SAMPLE #CU14829999  Priority: N/A 01402.571  EA 02/26/99 02/26/99  Req: 479289 Ship Via: FED EXP P1					1.0000	65.0000	\$65.00
	Prime Contract #: NRC0297009 AOP: 704-000 1.20  (3) ITEM 1 WILL BE HELD IN STOCK BY METAL SAMPLES TO BE CUT INTO SPECIMENS AS REQUIRED BY THE PROJECT AND WILL NOT BE SHIPPED TO SWRI.  RECEIVING DO NOT INSPECT.  THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER. PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.  "IF THIS ORDER INCLUDES A GOVERNMENT CONTRACT NUMBER, THEN ANY PROPERTY FURNISHED HEREWITH IS CONSIDERED GOVERNMENT-FURNISHED PROPERTY WHICH MUST BE ACCOUNTED FOR IN ACCORDANCE WITH FAR, PART 45. REFER TO GENERAL PURCHASE ORDER TERMS AND CONDITIONS FOR RISK OF LOSS."							

69/112

**Southwest Research Institute**

6220 Culebra Road

San Antonio, TX 78238-5166

**Purchase Order: 982518S**

Page: 3 of 3

Date Printed: 02/08/1999

Order To: METAL SAMPLES, INC.

104367

ROUTE 1, BOX 152

MUNFORD, AL 36268

Contact: BEN LACKEY

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
0. 8/99	Jimmie Silvers	NET 30	SHIPPING POINT		N/A	SEAN BROSSIA/BLDG. 57		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COST
	Bill To: Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510  <div>Authorized Signatures</div>						PO Total Amt:	\$22,159.00

2/11/99

## Southwest Research Institute

6220 Culebra Road

San Antonio, TX 78238-5166

Purchase Order: 982408S

Page: 1 of 2

Date Printed: 01/22/1999

Order To: METAL SAMPLES, INC.

ROUTE 1, BOX 152

MUNFORD, AL 36268

104367

Ship To: Southwest Research Institute

6220 Culebra Road

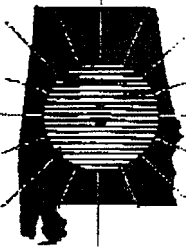
San Antonio, TX 78238-5166

Contact: BEN

ORDER DATE	BUYER	TERMS	FOB	SALES ORDER	SHIP VIA	DELIVER TO		
01/2/99	Jimmie Silvers	NET 30	SHIPPING POINT		FED EXP P1	D.DUNN/57/6090		
LINE	ITEM/DESCRIPTION	REV	U/M	DUE DATE	DESIRED DATE	QUANTITY	NET UNIT COST	EXTENDED COS.
	***** * CONFIRMATION * ***** This is a rated order certified for national defense use, and the contractor shall follow all requirements of the Defense Allocations System Regulation (15 CFR Part 700).							
1	MISC C-22 WELDED CREVICE REPASSIVATION SPECIMENS		EA	02/09/99	02/09/99	30.0000	162.5000	\$4,875.00
	Req: 479288  Prime Contract #: NRC0297009                      Priority: N/A AOP: 704-000 1.20                      01402.571							
2	MISC ARCHIVE SPECIMEN W/WELD WITHOUT MILLING 0.5" THICK, 4" LONG		EA	02/09/99	02/09/99	1.0000	90.0000	\$90.00
	Req: 479288  Prime Contract #: NRC0297009                      Priority: N/A AOP: 704-000 1.20                      01402.571							
	THE GENERAL PURCHASE ORDER TERMS AND CONDITIONS ATTACHED ARE MADE A PART OF THIS ORDER. PLEASE SIGN AND RETURN A PHOTOCOPY ACKNOWLEDGING ORDER WITHIN 5 WORKING DAYS.							
	Bill To: Southwest Research Institute P.O. Drawer 28510 Attention: Accounts Payable San Antonio, TX 78228-0510						PO Total Amt:	\$4,965.00

72/112

Date: 11-4-99



ALABAMA  
SPECIALTY  
PRODUCTS, INC.

Divisions of ASPI: Metal Samples Co.

Alabama Research & Development

Alabama Laser Technologies

Alabama Laser Systems



To: DARRELL DUNN

From: Larry Braden

Company: SOUTHWEST RESEARCH

At: Alabama Specialty Products

Fax Number: 210-522-5184

For Information Call: (256)358-4202

Pages: (including cover page) 3

Fax Number: (256)358-4515

PROCESS FOR WELDING PER YOUR REQUEST.  
REF. YOUR P.O. #9824085.

*Larry*

73/112

**QW-402 WELDING PROCEDURE SPECIFICATION (WPS)**  
(See QW-201.1, Section IX, 1974 ASME Boiler and Pressure Vessel Code)

Company Name Metal Samples  
Welding Procedure Specification No. \_\_\_\_\_ Date \_\_\_\_\_ Supporting PQR No. \_\_\_\_\_  
Revisions \_\_\_\_\_  
Welding Process(es) GTAW Type(s) Manual

**JOINTS (QW-402)** Double VEE  
Groove Design \_\_\_\_\_  
Backing: Yes \_\_\_\_\_ No \_\_\_\_\_  
Backing Material (Type) \_\_\_\_\_  
Other \_\_\_\_\_

**BASE METALS (QW-403)**  
P No. C-22 to P. No. C-22  
Thickness Range 1/2"  
Pipe Dia. Range \_\_\_\_\_  
Other \_\_\_\_\_

**FILLER METALS (QW-404)**  
F No. C-22 Other \_\_\_\_\_  
A No. \_\_\_\_\_ Other \_\_\_\_\_  
Spec No. (EFA) \_\_\_\_\_  
AWS No. (Class) \_\_\_\_\_  
Size of Electrode \_\_\_\_\_  
Size of Filler 7/16"  
Electrode-Flux (Class) \_\_\_\_\_  
Consumable Insert \_\_\_\_\_  
Other \_\_\_\_\_

**POSITION (QW-405)** 1-G  
Position of Groove \_\_\_\_\_  
Welding Progression \_\_\_\_\_  
Other \_\_\_\_\_

**PREHEAT (QW-406)**  
Preheat Temp. \_\_\_\_\_  
Interpass Temp. \_\_\_\_\_  
Preheat Maintenance \_\_\_\_\_  
Other \_\_\_\_\_

**POSTWELD HEAT TREATMENT (QW-407)**  
Temperature \_\_\_\_\_  
Time Range \_\_\_\_\_  
Other \_\_\_\_\_

**GAS (QW-408)**  
Shielding Gas(es) Argon  
Percent Composition (mixtures) 99.9%  
Flow Rate 30 CFH  
Gas Backing Argon  
Trailing Shielding Gas Composition \_\_\_\_\_  
Other \_\_\_\_\_

**ELECTRICAL CHARACTERISTICS (QW-409)**  
Current AC or DC DC Polarity STRAIGHT  
Amps (Range) 130-135 Volts (Range) 12-13  
Other \_\_\_\_\_

**TECHNIQUE (QW-410)** String  
String or Weave Bead \_\_\_\_\_  
Orifice or Gas Cup Size \_\_\_\_\_  
Initial & Interpass Cleaning (Brushing, Grinding, etc) Brush

Method of Back Gouging \_\_\_\_\_  
Oscillation \_\_\_\_\_  
Contact Tube to Work Distance \_\_\_\_\_  
Multiple or Single Pass (per side) Multiple

Multiple or Single Electrodes \_\_\_\_\_  
Travel Speed (Range) 6-8 IPM  
Other \_\_\_\_\_

79/112

Order No. \_\_\_\_\_

Tested Using (Plate or Pipe) Plate  
Thickness Tested 3/8"  
Positions Tested 1G  
(OH-V-H-F) (F)  
Type Weld (Arc or Gas) GTAW  
Applicable Code AWS D1.1-92

Signature Shane Turner



This Will Certify That

Shane Turner

has passed Welder Qualification

as stated on reverse side 1/8" to 3/4"

This card valid only on work performed by Shane Turner

Shane Turner

Dated 8-18-92

AWS  
SC-1  
CW

Order No. \_\_\_\_\_

Tested Using (Plate or Pipe) Plate  
Thickness Tested .125  
Positions Tested 1G  
(OH-V-H-F) (F)  
Type Weld (Arc or Gas) GTAW  
Applicable Code MIL-STD-1595A

Signature Shane Turner



This Will Certify That

Shane Turner

has passed Welder Qualification

as stated on reverse side .084 to .50

This card valid only on work performed by Shane Turner

Shane Turner

Dated 8-18-92

AWS  
SC-1  
CW

97-A CERTIFIED REPORT OF TESTS • RAPPORT D'ESSAIS CERTIFIE • WERKSZEUGNIS

INVOICE NO. NO. DE FACTURE RECHNUNGS NR.	B.O. SOLDE B.O.	SUP.	DATE ENTERED DATE DE COMMANDE BESTELLDATUM	CUSTOMER REFERENCE • REFERENCE CLIENT • KUNDENBESTELLDATEN	REPORT NO. RAPPORT NO. ZEUGNIS NR.	PAGE OF PAGES PAGE DE PAGES ANZAHL DER SEITEN
00106-1-1-0 00 00			980722	39759	980723808	1 1

**HAYNES**  
International

Haynes International, Inc.  
1020 West Park Avenue  
P.O. Box 9013  
Kokomo, Indiana 46902-9013

OLD TO • CLIENT • BESTELLERANSCHRIFT	SHIP TO • DESTINATAIRE • LIEFERANSCHRIFT
ALABAMA SPECIALTY PRODUCTS INC 152 METAL SAMPLES RD MUNFORD AL 36268	ALABAMA SPECIALTY PRODUCTS, INC. 152 METAL SAMPLES ROAD MUNFORD AL 36268

PRODUCT DESCRIPTION • DESCRIPTION PRODUIT • MATERIAL BESCHREIBUNG

.5 x .36 x .24  
HASTELLOY (R) C-22 (R) ALLOY  
PLATE

SPECIFICATION • SPECIFICATION • SPEZIFIKATION	QUANTITY ORDERED QUANTITE COMMANDEE BESTELLMENGE	QUANTITY SHIPPED QUANTITE EXPEDIEE LIEFERMENGE
FM-B-575-94, ASME-SB-S7 5-95 N06022	1 PC	1 PC

HEAT NUMBER NUMERO DE COULEE CHARGE NR.	HEAT CODE	PCS	CHEMICAL ANALYSIS • ANALYSE CHIMIQUE • CHEMISCHE ANALYSE																	
237783335		1	AI	B	C	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	V	W		
					003	1012140			394	241347	BAL	008	001				17	387		

TENSILE TEST AT ROOM TEMPERATURE • ESSAI DE TRACTION A TEMP. AMBIANTE • ZUGVERSUCH BEI RAUM TEMP.				TENSILE TEST AT ELEVATED TEMPERATURE • ESSAI DE TRACTION A HTE. TEMP. • WARM ZUGVERSUCH				STRESS RUPTURE • ESSAI A CHARGE DE RUPTURE • ZEITSTANDVERSUCH					
ULTIMATE ZUGFESTIGKEIT	YIELD 1% YIELD 1% STRECKGRENZE	YIELD 0.2% YIELD 0.2% STRECKGRENZE	% ELONG % ALLONG EN % DEHNUNG	TEST ESSAI VERSUCH	ULTIMATE ZUGFESTIGKEIT	YIELD 1% YIELD 1% STRECKGRENZE	YIELD 0.2% YIELD 0.2% STRECKGRENZE	% ELONG % ALLONG EN % DEHNUNG	TEST ESSAI VERSUCH	STRESS CONTRAINTE SPANNUNG	HOURS HEURES STUNDEN	% ELONG % ALLONG EN % DEHNUNG	% RA
PSI		PSI	21N	TEMP*					TEMP*				
07000		62000	660										

ANNEALED HARDNESS DURETE RECUIT GEALTERT HAERTE	AGED HARDNESS DURETE VIEILLI GEALTERT HAERTE	GRAIN SIZE GROSSEUR DE GRAIN KORNGROSSE
IRB 05		3.0

MAT'L I.D. NO. N986 P.O. NO. 39759  
SPEC. N06022 INITIAL MB8  
C22

CERTIFIED BY • CERTIFIE PAR • BESCHIEINIGT DURCH

*James P. Buckley*  
6-23-98

THIS MATERIAL MEETS THE REQUIREMENTS OF THE LISTED SPECIFICATION, MODIFIED BY ANY EXCEPTIONS OR PURCHASE ORDER REQUIREMENTS. SPECIFICATION MARKING REQUIREMENTS MAY BE WAIVED ON ORDERS REQUIRING MULTIPLE MATERIAL SPECIFICATIONS.  
BILL ORDERS USED-- 36-05976-03

75/11/2



# AMERICAN FILLER METALS CO.

76/112

P. O. BOX 12748 • HOUSTON, TEXAS 77217-2748  
PHONE: (713) 649-8785 • FAX: (713) 644-9628 • 1-800-394-4550

## CERTIFIED MATERIAL TEST REPORT

XX ACTUAL


     TYPICAL

Customer HOLOX Alloy 622 C22  
Address \_\_\_\_\_ Specification AWS A5.14 ERNiCrMo-10  
City, State, Zip \_\_\_\_\_ Size 1/16 x 36 Qty 9.08#  
Cust. Order No. 88253 Heat No. XX1045BG11  
Date Shipped 5-30-97

Aluminum	Iron	3.05	Silicon	.06
Beryllium	Lanthanum		Silver	
Boron	Lead		Sulphur	.001
Cadmium	Magnesium		Tantalum	
Carbon	Manganese	.24	Tin	
Chromium	Molybdenum	14.13	Titanium	
Cobalt	Nickel	58.53	Tungsten	3.15
Columbium	Nitrogen		Vanadium	.01
Copper	Phosphorus	.007	Zinc	
Ferrite			Zirconium	
			Others	

This certification is provided by American Filler Metals Inc. with the understanding that if the product covered does not conform to the stated specifications, there shall be no personal liability of any kind by the undersigned. Furthermore, the obligation and liability (of such non-conformance) by American Filler Metals Inc. will be limited to: a) furnishing the purchaser with a product conforming to the correct specifications, at no additional charge, or b) to refund the full purchase price paid for such non-conforming product. American Filler Metals Inc. will not be liable for consequential damage.

Physical Prop \_\_\_\_\_  
Tensile \_\_\_\_\_  
Yield \_\_\_\_\_  
Elongation \_\_\_\_\_

  
Authorized Representative

MAT'L I.D. NO. M277 P.O. NO. 34478

SPEC. \_\_\_\_\_ INITIAL MBS

C22



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SAN ANTONIO TX 78284  
DARRELL DUNN

P. O. # 50138

DESCR

REPORT DATE: 11/03/99

LAB NO: 1028-059 / 03


JOB NO: 11/01 #58

WELDED ALLOY C-22 HEAT# 2277-8-3235 W/FILLER HEAT# XX1045B011 (TAKEN FROM  
WELD REGION IN CENTER OF WELD)

## CHEMICAL ANALYSIS

Si	.07	Mn	.22	C	.014
P	.001	S	.001	Ni	58.06
Cr	20.78	Mo	13.51	Cb	.49
Fe	3.25	W	2.86	V	.05

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

  
G. A. INSPECTOR

ALL CHEMICAL TEST RESULTS ARE REPORTED IN WEIGHT PERCENT UNLESS OTHERWISE NOTED.

PAGE 3 OF 3

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P.O. # 50138

DESCR

REPORT DATE: 11/03/99

LAB NO: 1028-059 / 02

JOB NO: 11/01 #11

ALLOY 622 FILLER ROD HEAT# XX1045BG11

## CHEMICAL ANALYSIS

Si	.02	Mn	.25	C	.020
P	.006	S	.001	Ni	57.86
Cr	21.02	Mo	13.90	Co	.09
Fe	3.25	W	2.86	V	.01

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

  
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P. O. # 50138

DESCR

REPORT DATE: 11/03/99

LAB NO: 1028-059 / 01

JOB NO: 11/01 #12

ALLOY C-22 HEAT# 227-B-3235

## CHEMICAL ANALYSIS

Si	.03	Mn	.21	C	.015
P	.001	S	.001	Ni	55.83
Cr	21.10	Mo	13.04	Co	1.77
Fe	4.61	W	2.59	V	.16

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

  
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DESCR 01-25-00 PD# X94367X  
REQ# 505956

REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 01

JOB NO:

ASTM B265 GR 7 WROUGHT TI-GR 7 HEAT# R5835

## CHEMICAL ANALYSIS

.023	Ti	REMAINDER	Fe	.15
58PPM	N	.020	O	.20
.14				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ASTM E1447 ; ASTM E 1409 ;

  
QA INSPECTOR

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DESCR 01-25-00 PO# X94367X  
REQ# 505956

REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 03

JOB NO:

ASTM A265 GR 7 WELD WIRE TI-GR 7 HEAT# BN4591

## CHEMICAL ANALYSIS

C	.027	Ti	REMAINDER	Fe	.03
P	17.6PPM	N	.0011	0	.046
Fe	.13				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ASTM E1447 ; ASTM E 1409 ;

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REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 04

JOB NO:

ASTM B265 GR 7 TI-GR 7 WIRE HEAT# MSP914/Z1812

## CHEMICAL ANALYSIS

.07	Ti	REMAINDER	Fe	.05
23.2PPM	N	.0083	0	.12
.13				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ASTM E1447 ; ASTM E 1409 ;

  
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REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 05

JOB NO:

ASTM B350 WROUGHT ZIRCALOY-4 HEAT# 2209470

## CHEMICAL ANALYSIS

Ct	.12	Sn	1.59	Fe	.22
Zr	BALANCE				
Cb	.005				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; CLASSIC WET ;

  
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REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 06

JOB NO:

ASTM B350 ZIRCALOY-4 WIRE HEAT# MSD830/214450Q

CHEMICAL ANALYSIS

Ct	.11	Sn	1.57	Fe	.21
Zr	BALANCE				
Cb	.004				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; CLASSIC WET ;

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REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 07

JOB NO: 02/10 #11

ASTM 575 WROUGHT ALLOY C22 HEAT# MSJ244/XX0604BK

# CHEMICAL ANALYSIS

Si	.04	Mn	.25	C	.014
P	.002	S	.001	Ni	BALANCE
Cr	20.16	Mo	15.85	V	<.01
Co	.07	Fe	2.30	W	1.65

1/4 HR PT

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

*hh*  
 QA INSPECTOR

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DESCR 01-25-00 PC# X94367X  
REG# 505956

REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 08

JOB NO: 02/10 #12

ASTM 575 WROUGHT ALLOY C22 HEAT# MSJ351/XX0680B0

## CHEMICAL ANALYSIS

Si	.06	Mn	.26	C	.009
P	.002	S	.001	Ni	BALANCE
Cr	20.20	Mo	15.66	V	.01
Co	.07	Fe	2.45	W	2.40

1/4 HR PT

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

*ph*  
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REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 09

JOB NO: 02/10 #13

ASTM 575 WELDED ALLOY C22 HEAT# MSJ351/XX0680B6

## CHEMICAL ANALYSIS

Si	.05	Mn	.23	C	.013
P	.003	S	.001	Ni	BALANCE
Cr	20.12	Mo	15.80	V	.01
Co	.06	Fe	2.10	W	1.25

1/4 HR PT

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

*feh*  
 QA INSPECTOR

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REQ# 505956

REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 10

JOB NO: 02/02 #15

ASTM 575 ALLOY C22 WIRE HEAT# MSH157/227703270

## CHEMICAL ANALYSIS

Si	.04	Mn	.29	C	.018
P	.002	S	.001	Ni	BASE
Cr	20.48	Mo	15.10	V	.12
Co	.60	Fe	4.90	W	2.75

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

*ph*  
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REQ# 505956

REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 11

JOB NO:

ASTM A240 WROUGHT 316L SS HEAT# MSJP012/273854

CHEMICAL ANALYSIS

Si	.59	Mn	1.53	C	.006
P	.023	S	.014	Ni	10.67
Cr	16.58	Mo	2.17	Cu	.33
Co	.20	N	.040	Fe	67.54

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

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REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 12

JOB NO: 02/02 #17

ASTM A240 WROUGHT 316L SS HEAT# MSJP770/BB4438

## CHEMICAL ANALYSIS

Si	.49	Mn	1.93	C	.030
P	.034	S	.001	Ni	10.68
Cr	16.14	Mo	2.33	N	.023
Fe	67.47				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

  
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REQ# 505956

REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 13

JOB NO: 02/02 #18

ASTM A240 WELDED 316L SS HEAT# MSJP770/B84438

CHEMICAL ANALYSIS

Si	.46	Mn	1.85	C	.030
P	.023	S	.001	Ni	10.29
Cr	16.42	Mo	2.31	N	.023
Fe	67.64				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

  
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DESCR 01-25-00 PO# X94367X  
REQ# 505956

REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 14

JOB NO: 02/02 #19

ASTM A240 316L SS WIRE HEAT# MSH405/E77055

CHEMICAL ANALYSIS

Si	.48	Mn	1.60	C	.027
P	.011	S	.001	Ni	12.40
Cr	19.30/19.36	Mo	2.52	N	.039
Fe	63.14				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ; ASTM E 354 ;

  
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P. O. # 50138

DESCR 01-25-00 PD# X94367X  
 REQ# 505936

REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 15

JOB NO: 2/1 #40

ASTM A516-64 WROUGHT A516 CARBON STEEL HEAT# MSF215/E44794

# CHEMICAL ANALYSIS

Si	.25	Mn	1.04	C	.29
P	.018	S	.015	Ni	.03
Cr	.04	Mo	.01	Cu	.01
Fe	BASE				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ;

*[Signature]*  
 QA INSPECTOR

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P. O. # 50138

DESCR 01-25-00 PO# X94367X  
REQ# 505956

REPORT DATE: 02/15/2000

LAB NO: 0128-005 / 16

JOB NO: 2/1 #41

ASTM A516-64 WELDED A516 CARBON STEEL HEAT# MSF215/E44794

## CHEMICAL ANALYSIS

Si	.25	Mn	1.05	C	.26
S	.017	S	.016	Ni	.03
Cr	.03	Mo	<.01	Cu	.01
Fe	BASE				

TEST METHODS: ASTM E 663 ; ASTM E 1019 ; ICP ;

  
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