



Casting Emission Reduction Program

Prepared by:

TECHNIKON LLC

5301 Price Avenue ▼ McClellan, CA, 95652 ▼ (916) 929-8001

www.technikonllc.com

**US Army Contract DAAE30-02-C-1095
FY 2002 Tasks**

**Results Dissemination:
Technology and Knowledge Transfer
and Outreach**

Technikon # 1409-3.0

30 September 2003



THIS PAGE INTENTIONALLY LEFT BLANK

Results Dissemination: Technology and Knowledge Transfer and Outreach

1409-3.0

This report has been reviewed for completeness and accuracy and approved for release by the following:

Program Manager: // Original Signed //
Jodie Crandell
Date

VP Measurement Technologies: // Original Signed //
Clifford Glowacki, CIH
Date

VP Operations: // Original Signed //
George Crandell
Date

President: // Original Signed //
William Walden
Date

THIS PAGE INTENTIONALLY LEFT BLANK

Table of Contents

I.	Executive Summary	1
II.	Background and Introduction.....	3
	Subtask 3.1 - Technology & Knowledge Transfer	3
	Subtask 3.2 - Outreach.....	3
III.	Results and Discussion	5
	Subtask 3.1 – Technology and Knowledge Transfer	5
	Subtask 3.2 – Outreach	13
IV.	Summary	15

THIS PAGE INTENTIONALLY LEFT BLANK

I. Executive Summary

Two important Subtasks under the FY2002 Tasks are contained under the Research Task – Results Dissemination. Under this Research Task, Technikon was directed to proactively provide Technology Transfer, Knowledge Transfer and Outreach to the Department of Defense (DOD), the Environmental Protection Agency (EPA), the Department of Energy (DOE), the metal casting industry, and other stakeholders to share the results of the CERP research effort. The task required Technikon to present papers at Industry and DOD conferences (such as the American Foundry Society (AFS) Environmental Health and Safety Conference and the Defense Manufacturing Center), have exhibits at conferences, and participate in Industry and DOD workshops, seminars, technical conferences, and standards committees. The task also required Technikon to provide access to results of the research effort by maintaining a website with both secure and public sections on the World Wide Web.

With input from the COR and the CERP Steering Committee, Technikon identified opportunities for Outreach so that the CERP is better known and more widely known than at the beginning of the FY2002 Contract.

The availability to the public of technical reports delivered under this and previous contracts has also widened the understanding and knowledge of CERP. To date, numerous professionals that have not been involved in CERP have accessed the public web site and downloaded the reports. New stakeholders have been identified and added to the CERP mailing list, resulting in more participation in the CERP meetings and its research activities.

THIS PAGE INTENTIONALLY LEFT BLANK

II. Background and Introduction

Two important Subtasks under the FY2002 Tasks are contained under the Research Task – Results Dissemination. Under this Research Task, Technikon was directed to proactively provide Technology Transfer, Knowledge Transfer and Outreach to the Department of Defense (DOD), the Environmental Protection Agency (EPA), the Department of Energy (DOE), the metal casting industry, and other stakeholders to share the results of the CERP research effort. The task required Technikon to present papers at Industry and DOD conferences (such as the American Foundry Society (AFS) Environmental Health and Safety Conference and the Defense Manufacturing Center), have exhibits at conferences, and participate in Industry and DOD workshops, seminars, technical conferences, and standards committees. The task also required Technikon to provide access to results of the research effort by maintaining a website with both secure and public sections on the World Wide Web.

The following directives were given to Technikon in the subtasks for this task:

Subtask 3.1 - Technology & Knowledge Transfer

Seek to deploy materials, products, processes, test methods, and technology results to appropriate DOD and commercial sites supporting the defense industrial base, and to those industries that have an interest in emissions measurement and control. Conduct seminars, make presentations, produce publications, maintain a CERP Internet website, and conduct other forms of information transfer to facilitate technology and knowledge transfer. Use multimedia tools as appropriate to support these activities; e.g., printed materials, photographic images, electronic presentations, videos, and CD-ROMs. Establish a repository that will be accessible through the Internet as a worldwide web site. Information contained in the repository will consist of technical papers, reports, results and test data, presentations, and briefings. This site will have a secure section for reports for Army approval and a public section for information that is approved for the release to the public.

Subtask 3.2 - Outreach

Actively participate in technical conferences, workshops, and symposia and will interact with environmental associations & organizations and technical societies germane to this Project, to raise the level of public and private sector awareness. Share findings from this Project, identify possible stakeholders for technology transitioning, and learn firsthand about high priority emission control and measurement issues.

THIS PAGE INTENTIONALLY LEFT BLANK

III. Results and Discussion

Subtask 3.1 – Technology and Knowledge Transfer

During the execution of FY2002 Tasks, Technikon updated the Technikon worldwide web site (www.technikonllc.com) which hosts the repository for technical papers, reports, results and test data, and other information pertaining to the CERP and its activities. The following reports were posted on the secure section of the web site:

Test	WBS #	Description	Test Scheduled/ Completed	Report Scheduled/ Completed	Date Scheduled/ Posted to Extranet
ER	1.1.1	Core Room Mixing, Making and Storage Product Test with cold box low solvent binder system; Ashland 389/689	9/27/02	12/24/02	12/30/02
ES	1.1.2	Core Room Mixing, Making and Storage Product Test with cold box low solvent binder system; HA 7211/7621	10/18/02	1/31/03	1/31/03
ET	1.1.3	Core Room Mixing, Making and Storage Product Test with cold box low solvent binder system; HA 704/306	10/31/02	3/12/03	3/12/03
EV	1.1.4	Core Room Mixing, Making and Storage Product Test with cold box low solvent binder system; HA Gasharz 7388/Aktivator7 187	12/24/02	3/31/03	4/2/03
EW	1.1.5	Core Room Mixing, Making and Storage Product Test with cold box low solvent binder system; Ashland 471/871	1/23/03	4/30/03	4/30/03
FE	1.1.6	No Bake Pouring and Cooling Product Test	5/7/03	7/31/03	7/31/03
FC	1.1.7	Emission comparison of Polyurethane Binders with Naphthalene depleted solvent	5/28/03	7/31/03	7/31/03

Test	WBS #	Description	Test Scheduled/ Completed	Report Scheduled/ Completed	Date Scheduled/ Posted to Extranet
FD	1.1.8	Core Room comparison of emissions from a standard binder and a Naphthalene depleted solvent binder	6/603	7/31/03	7/31/03
EM	1.2.1	Green Sand Baseline – Seacoal and Sodium Silicate Core	7/19/02	9/27/02	9/30/02
EO	1.2.2	Core Baseline, No Seacoal	8/15/02	10/15/02	10/18/02
EQ	1.2.3	Production Core Mixing, Making and Storage Baseline	9/13/02	11/22/02	12/24/02
EY	1.2.4	Core Room No Bake Mixing, Making and Storage Baseline with Standard Polyurethane No Bake Binder	2/24/03	5/29/03	5/29/03
FB	1.2.5	Emission comparison of Polyurethane Binders with Naphthalene depleted solvent	5/21/03	7/31/03	7/31/03
EU	1.3.1	Parts 2 and 3: Core Room – Determine Variable Effects	12/2/02	8/1/03	8/29/03
FG	1.3.2	Acoustic Stimulation of Aluminum	5/15/03	8/21/03	9/30/03
--	1.4	First CBA Analysis – Protein Binder System	--	10/24/03	10/31/03
EZ	1.5	Modeling Test; No Bake Pouring and Cooling Emissions	4/10/03	8/22/03	8/29/03
--	2.1.1	HAP Method Validation 1	--	1/29/03	1/29/03
--	2.1.2	HAP Method Validation 2	--	7/31/03	7/31/03
--	2.2.1	HAP Method Development 1	--	2/18/03	2/18/03
--	2.2.2	HAP Method Development 2	--	6/30/02	7/2/03
--	2.3	Establishment of a Systems Integration and Validation Laboratory Test Site – A Cost/Benefit Analysis	--	8/11/03	8/13/03
--	2.4	Real Time Emission Measurement	--	7/31/03	7/31/03
--	3.1	Technical Report for Research Task 3 Results Dissemination	--	9/30/03	9/30/03

Test	WBS #	Description	Test Scheduled/ Completed	Report Scheduled/ Completed	Date Scheduled/ Posted to Extranet
--	4.0	Casting Requirements Forum Report	--	3/30/03	4/30/03
--	5.0	Importance of Titanium Casting to the DOD	--	6/25/03	6/25/03
--	5.0	Metal Casting Industry Contribution to the DOD	--	6/25/03	6/25/03
--	5.0	Roadmap for the Development of Titanium Usage in DOD Weapons Systems – Report 3	--	8/20/03	8/29/03
FH	6.1	Quality Testing Development	7/3/03	8/18/03	9/24/03
--	6.2	Technikon ISO Draft Quality Manual	--	7/31/03	7/31/03
FA	7.1	Thin Wall Iron Casting Technology and the Study of the Effects of Corrosion of Thin Wall Castings	6/6/03	8/15/03	8/29/03
--	7.2	Titanium Casting Capability Report	--	4/30/03	5/21/03

THIS PAGE INTENTIONALLY LEFT BLANK

The following reports were posted on the public section web site, established during FY2002 Tasks. The reports were approved for unlimited public distribution through a process recommended by the CERP Steering Committee and approved by the Contracting Officer's Representative.

Test or ID	Contract Number	WBS #	Report Title	Date Posted to web site
--	Air Force	--	Baseline Emissions Report from the CERP Production Foundry	Feb. 13, 2003
--	Air Force	--	Baseline Emissions Report from the CERP Pre-Production Foundry	Feb. 13, 2003
--	Air Force	--	Mexico Report	Feb. 26, 2003
--	Air Force	--	UC Davis Study of Aerosol Emissions at the CERP Foundry	Mar. 12, 2003
--	N256	--	Power Point Presentation on Foundry Processes and their Effects on Hazardous Air Emissions	Mar. 12, 2003
--	N256	1.1.4	Test Information Management System	May 6, 2003
DG	N256	1.2.1.1	Phenolic Urethane Iron No-Bake Baseline Test	Apr. 10, 2003
DN	N256	1.2.1.3	Phenolic Urethane Aluminum Greensand Baseline Test Without Seacoal	Apr. 10, 2003
DD	N256	1.2.2	Production Baseline Test	Apr. 10, 2003
EC	N256	1.2.3	Core Making Emissions Study-Pre and Post Scrubber	Apr. 10, 2003
EE	N256	1.2.4.1	Iron Melting HAP Test	Apr. 10, 2003
DB	N256	1.2.GSA.1	Core Wash Quality Baseline Study	Apr. 10, 2003
DQ	N256	1.3.1.1	20-80 Western-Southern Bentonite Baseline	May 30, 2003
--	N256	2.1.1	Scrubbers Technology	May 3, 2003
BT	N256	2.2.1	Spatial Distribution Emissions Study	Apr. 15, 2003
CQ	N256	2.3.1.1	No-Bake Urethane Aluminum Capability Study	Apr. 15, 2003
DJ	N256	2.3.1.2	No-Bake Furan Iron Capability Study	Apr. 15, 2003
CP	N256	2.3.GSA.1	No-Bake Iron Capability Study-1	Apr. 15, 2003
CW	N256	2.3.GSA.2	No-Bake Iron Capability Study-2	Apr. 15, 2003
--	N256	3.1.1	Emission Measurement Procedure 2	Apr. 16, 2003
--	N256	3.1.1	Emissions Measurement Procedure 1	May 6, 2003
--	N256	3.1.3	Verify Method 1	May 6, 2003
--	N256	3.2.1	HAP Identification	Apr. 17, 2003
--	N256	3.2.2	Methodology Evaluation	Apr. 16, 2003

RESEARCH TASK 3.0: RESULTS DISSEMINATION
 TECHNIKON 1409-3.0
 30 SEPTEMBER 2003

Test or ID	Contract Number	WBS #	Report Title	Date Posted to web site
--	N256	3.3.3	ASAM Validation Test 1	May 6, 2003
--	N256	3.4.1	SCPI Protocol for Facilities	May 6, 2003
--	N256	3.4.2	ASAM Instrument Driver Progress Report	May 6, 2003
--	N256	3.4.3	ASAM IVI Evaluation	May 6, 2003
--	N256	3.4.4	ASAM ODS XML Progress Report	May 6, 2003
--	N256	3.4.5	Provide Support of ASAM Technical Efforts	May 6, 2003
--	N256	3.5.1	Progress Report for Adapt Standards	May 6, 2003
--	N256	4.1	Alternate Use of Sand	May 6, 2003
--	N256	4.2.1	Core Room Monitoring	May 6, 2003
--	N256	GSA.R3.3	Phase 1 SIVL Executive Software and Report	May 6, 2003
CO	N256	1.2.GSA.3	Melting Emissions from Gray, Ductile and Compacted Flake Irons	Aug. 19, 2003
DA	N256	1.3.GSA.1	Addendum to 20Western/80 Southern Bentonite Clay Ratio	Aug. 19, 2003
DA	N256	1.3.GSA.1	AO Process Test in Iron	Aug. 19, 2003
DC	N256	1.2.GSA.2	Core Box Cleaner Study	Aug. 19, 2003
DR	N256	1.3.1.3	50 Western/50 Southern Bentonite and Tap Water	Aug. 19, 2003
DS	N256	1.3.1.2	50 Western/50 Southern Bentonite Clay Ratio	Aug. 19, 2003
DT	N256	1.3.1.4	80 Western/20 Southern Bentonite and Tap Water	Aug. 19, 2003
DU	N256	1.3.1.5	80 Western/20 Southern Bentonite – Advanced Oxidation	Aug. 19, 2003

Other activities also occurred on the Technikon web site. These included the following:

- Completely redesigned and reformatted the web site to allow more updatable pages for current events, articles and related outreach information.
- Updated the format to make the web site more user-friendly.
- Advertised the 2003 Casting Requirements Forum and provided on-line registration capability.
- Posted 2003 Casting Requirements Forum Presentations.
- Updated links to related web sites.
- Advertised upcoming CERP Quarterly meetings.
- Added space in secured area for FY2002 Task deliverables.
- Added space under downloads for unlimited public access to approved reports delivered under Task N256, FY2002 Tasks, and future Tasks.

Finally, under Subtask 3.1, Technikon conducted seminars and made presentations regarding CERP and its research. These included the following:

Conference Name	Location	Seminar or Presentation	Dates
2002 CISA Summer Meeting	Galena, Illinois	Presentation	July 28-30, 2002
American Foundry Society (AFS) Environmental Health and Safety Conference	Milwaukee, Wisconsin	Seminar/Workshop	August 24-28, 2002
AFS Environmental Health and Safety Conference	Milwaukee, Wisconsin	Presentations	August 24-28, 2002
General Motors Environmental Workshop	Detroit, Michigan	Seminar/Workshop	September 19, 2002
California Cast Metals Association Environmental Workshop	Los Angeles, California	Workshop	October 30, 2002
Rock Island Arsenal Meeting	Rock Island Arsenal, Illinois	Presentation	February 18-21, 2003

Conference Name	Location	Seminar or Presentation	Dates
European Foundry Association Technical Meeting	Sacramento, CA (Technikon hosted this meeting)	Presentation	March 3-4, 2003
AFS Casting Congress	Milwaukee Wisconsin	Workshop and Presentation	April 25-28, 2003
California Cast Metals Association Annual Meeting	Sacramento, California	Presentation	May 15-16, 2003
AFS Environmental 101	Chicago, Illinois	Workshop	May 20-21, 2003
American Industrial Hygiene Conference and Exposition	Dallas, Texas	Workshop	May 10-16, 2003
Air and Waste Management Association Annual Meeting	San Diego, California	Presentation	June 2-5, 2003
California EPA sponsored International Symposium on Particulate Emissions	Los Angeles, California	Presented invited paper on Particulate Matter Emissions to international experts	May 7-10, 2003

Subtask 3.2 – Outreach

Under Subtask 3.2, Technikon participated in 14 technical conferences, workshops, and symposia in order to interact with various organizations regarding CERP and its research. Numerous contacts were made to identify additional stakeholders in further CERP research and in potential transitioning of CERP research outcomes and technology. These included the following:

Conference Name	Location	Contacts/Information	Dates
NELAC	Tampa, Florida	Renewed contact with several US EPA and state quality staff participants in continued development of environmental laboratory accreditation process	July 11-13, 2002
Joint Services Pollution Prevention and Hazardous Waste Management Conference	San Antonio, Texas	Made several contacts with potential stakeholders for future meeting attendance and possible joint research	August 19-22, 2002
AFS Environmental Health and Safety Conference	Milwaukee, Wisconsin	Solidified existing relationships with stakeholders and Steering Committee members	August 24-28, 2002
CERP Quarterly Meetings	Sacramento, California	Solidified existing relationships with stakeholders and Steering Committee members	October 28-29, 2002
NELAC	Santa Fe, New Mexico	Renewed contact with several US EPA and state quality staff participants in continued development of environmental laboratory accreditation process	November 17-20, 2002
SERDP/ESTCP	Washington, D.C.	Solidified existing relationships with stakeholders and formed potential new partnerships	December 2-5, 2002

Conference Name	Location	Contacts/Information	Dates
CERP Quarterly Meetings	Sacramento, California	Solidified existing relationships with stakeholders and Steering Committee members	January 16-17, 2003
ETV Conference	San Diego, California	Continued relationships with industry and state technical experts in airborne emissions measurement.	January 29-31, 2003
PITTCONN	Orlando, Florida	Met with instrumental and systems vendors and viewed new products for emissions measurements.	March 9-13, 2003
AFS Government Affairs Conference	Washington, D.C.	Met with metal casting industry leaders to discuss key issues	March 29-31, 2003
California EPA/DOE Meeting	Sacramento, California	Presided over workshop on renewable energy resources	April 14-15, 2003
AICHE	Dallas, Texas	Presented testing workshop and participated in technical committee work.	May 11-15, 2003
International Foundry Conference	Düsseldorf, Germany	Identified 4 new products for future testing at CERP. Solidified existing relationships with vendors and colleagues.	June 16-20, 2003

IV. Summary

With input from the COR and the CERP Steering Committee, Technikon identified opportunities for Outreach so that the CERP is better known and more widely known than at the beginning of the FY2002 Contract.

The availability to the public of technical reports delivered under this and previous contracts has also widened the understanding and knowledge of CERP. To date, numerous professionals that have not been involved in CERP have accessed the public web site and downloaded the reports. New stakeholders have been identified and added to the CERP mailing list, resulting in more participation in the CERP meetings and its research activities.