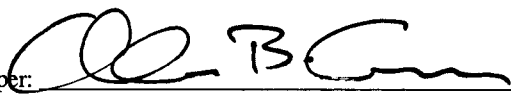


# SOFTWARE RELEASE NOTICE

1. SRN Number: GLGP-SRN-192		
2. Project Title: N/A, on CNWRA overhead charges.		Project No. 20-0751-013
3. SRN Title: Post Processing Software for Geomagnetic Surveys Version 1		
4. Originator/Requestor: Brandi L. Winfrey		Date: July 02, 1999
5. Summary of Actions <input checked="" type="checkbox"/> Release of new software <input type="checkbox"/> Release of modified software: <input type="checkbox"/> Enhancements made <input type="checkbox"/> Corrections made <input type="checkbox"/> Change of access software <input type="checkbox"/> Software Retirement		
6. Persons Authorized Access		
Name	Read Only/Read-Write	Addition/Change/Delete
Laura Connor	Read-Write	Addition
Charles Connor	Read-Write	Addition
Brandi Winfrey	Read Only	Addition
7. Element Manager Approval: <i>H. Lamm</i> <i>M. E. Kaye</i> Date: 7/2/99		
8. Remarks: To be used for field and any other applicable activities.		

# SOFTWARE SUMMARY FORM

01. Summary Date: 07/02/99	02. Summary prepared by: Brandi Winfrey	03. Summary Action: NEW	
04. Software Date: 01/01/98	05. Short Title: Post Processing Software		
06. Software Title: Geomagnetic Post Processing Software Version 1			07. Internal Software ID: none
08. Software Type:  <input type="checkbox"/> Automated Data System <input checked="" type="checkbox"/> Computer Program <input type="checkbox"/> Subroutine/Module	09. Processing Mode:  <input type="checkbox"/> Interactive <input checked="" type="checkbox"/> Batch <input type="checkbox"/> Combination	10. Application Area  a. General: <input checked="" type="checkbox"/> Scientific/Engineering <input type="checkbox"/> Auxiliary Analyses <input type="checkbox"/> Total System PA <input type="checkbox"/> Subsystem PA <input type="checkbox"/> Other  b. Specific: Software is intended for use in geologic surveys dealing with magnetometer readings.	
11. Submitting Organization and Address:  CNWRA/SwRI 6220 Culebra Road San Antonio, TX 78228		12. Technical Contact(s) and Phone:  Charles Connor, Programmer SWRI Div 20 (201) 522-6649  Laura Connor, Programmer SWRI-Div 09 (201) 522-4667	
13. Software Application: Associates location data, gathered with a GPS unit, and magnetometer readings.  Determines magnetometer base station drift relative to the first day, first base station reading, and adjusts measured magnetometer readings to remove this drift effect.  Determines the heading at each magnetometer reading and adjusts the reading to eliminate directional variations caused by the magnetic field of a bicycle (if used) while surveying.  Filters a data file by eliminating data lines containing readings above and below specified min and max values.  Performs an IGRF (International Geomagnetic Reference Field) correction on a data set of magnetometer readings using geodetic coordinates.  Converts latitude/longitude coordinates into UTM coordinates using the NAD83 ellipsoid (State Plane Coordinate Systems, North American Datum 1983).			
14. Computer Platform PC or SGI	15. Computer Operating System: Windows NT or IRIX 6.2	16. Programming Language(s): C	17. Number of Source Program Statements: 1433 lines
18. Computer Memory Requirements: 640K	19. Tape Drives: N/A	20. Disk Units: N/A	21. Graphics: none

22. Other Operational Requirements: none	
23. Software Availability: <input type="checkbox"/> Available <input type="checkbox"/> Limited <input checked="" type="checkbox"/> In-House ONLY	24. Documentation Availability: <input type="checkbox"/> Available <input type="checkbox"/> Preliminary <input checked="" type="checkbox"/> In-House ONLY
25. Software Developer: <u></u> Date: <u>July 2, 1999</u>	

# CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

## DESIGN VERIFICATION REPORT FOR CNWRA SOFTWARE: Post Processing Software for Geomagnetic Survey (PPSGS) Version 1

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July 2, 1999

### Post Processing Software for Geomagnetic Survey (PPSGS) Version 1

**NOTE:** This version of the PPSGS Software was developed on CNWRA overhead funds at no cost to outside sponsors. It was developed without the benefit of a Software Requirements Description (SRD) or a Software Development Plan (SDP). A CNWRA Nonconformance Report (NCR) was written to address this oversight. In the response to the NCR, it was agreed that much of the information normally contained in an SRD would be put into the User's Manual. That User's Manual and a Source Code document is included in this package.

1. **This Design Verification Report is prepared by:** Bruce Mabrito in conjunction with Brandi Winfrey.  
**Full Title of CNWRA scientific and engineering software:** Post Processing Software for Geomagnetic Survey (PPSGS) Version 1.  
**Demonstration work station:** Silicon Graphics Indigo 2 in the GIS Room of Bldg. 189, used in conjunction with the Yosemite server.  
**Operating System:** IRIX 6.2

2. **Software Requirements Description and any changes thereto approved by Element Manager?**  
YES                      NO                      N/A

If no, explain: No SRD was initially written. A NCR identified that fact and it was agreed that such information would be included in the User's Manual.

3. **Software Development Plan (SDP) and any changes have been approved by the Element Manager?**  
YES                      NO                      N/A

If no, explain: The PPSGS software was developed prior to the thought of an SDP, so there is no SDP and there will be none.

4. **Design and Development**  
**Module-level testing is documented in either scientific notebooks or in Software Change Reports?**  
YES                      NO                      N/A

If no, explain: Note: The User's Manual enclosed has the module-level testing documented in the section titled "Sample Problems."

5. Is the CNWRA scientific and engineering software developed in accordance with the conventions described in the SDP?

YES

☒ NO

N/A

If no, explain: The answer to this question is "no," because there was no SDP written for PPSGS Version 1. However, software coding conventions were followed and documented.

6. Is the CNWRA software documented internally?

☒ YES

NO

N/A

Note: See the Source Code Booklet for more information describing the internal documentation.

Does the primary program header contain the following information:

A. Program title, Developed for (Customer), Office/Division/Date/Customer Contact/Telephone number, Software Developer, Telephone number, titles of Associated Documentation/Designator, and the Disclaimer Notice?

☒ YES

NO

N/A

B. Source code module header information provides Program Name, Client Name, Contract Reference, Revision number?

☒ YES

NO

N/A

7. Software designed so that individual runs are uniquely identified by Date, Time, Name of software and version?

YES

☒ NO

N/A

Note: The date is imbedded in the software and printouts do not have a date. This software, ultimately, produces a graph.

8. The physical labeling on the software or the referenced list has Program Name/Title, Module/Name/Title, Module Revision, File Type (i.e. ASCII, OBJ, EXE), Recording Date and Operating System of the Supporting Hardware?

☒ YES

NO

N/A

9. Users' Manual

Is there a Users' Manual for the software?

☒ YES

NO

N/A

NOTE: The PPSGS Version 1 software has a User's Manual and it is in this package.

Are there basic instructions for the use of the software?

☒ YES

NO

N/A

NOTE: See User's Manual.

**10. Acceptance Testing**

**Does the acceptance testing demonstrate whether or not requirements in the SDP have been fulfilled?**

YES

NO

N/A

NOTE: Although there is no SDP, the Software Principal Investigator, Dr. C. Connor, has tested the software and finds it acceptable.

**Has acceptance testing been conducted for each intended computer platform and operating system?**

YES

NO

N/A

NOTE: Yes, it has, on a PC and on the SGI listed above.

**Have installation tests been performed on the target platform?**

YES

NO

N/A

NOTE: Yes.

**11. Configuration Control**

**Is the Software Summary Form completed and signed?**

YES

NO

N/A

If no, explain: N/A

**12. Is a software technical description prepared, documenting the essential mathematical and numerical basis?**

YES

NO

N/A

Note: See the User's Manual, pages 1-8 for this information.

**13. Is the source code available (or, is the executable code available in the case of commercial codes)?**

YES

NO

N/A

NOTE: A source code and an executable code will be put on the CD for Configuration Control.


**14. Have all the script/make files and executable files been submitted to the Software Custodian?**


YES

NO

N/A

NOTE: They will be maintained in this folder and kept in the CNWRA QA Records Room.

 7/2/99  
\_\_\_\_\_  
Brandi Winfrey Date  
CNWRA PPSGS Software Technician

 7/2/99  
\_\_\_\_\_  
Bruce Mabrito Date  
CNWRA Software Custodian

Enclosures/

Original to: Software Folder  
cc: CNWRA Software Developer  
Cognizant EM  
C. Connor

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