Sta. 4 (E)

SEP 16 1997 **ENGINEERING DATA TRANSMITTAL**

Page 1 of 1

1. EDT 620242

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
DISTRIBUTION	SGN Eurisys Services Corp.	N/A
5. Proj./Prog./Dept./Div.:	**6. Design Authority/ Design Agent/Cog. Engr.:**	**7. Purchase Order No.:**
Core Sampling/Characterization	George Janicek	N/A
8. Originator Remarks: Operability Test Report for Truck # 1 Flammable Gas modifications.		**9. Equip./Component No.:** N/A
		10. System/Bldg./Facility: 200 General
11. Receiver Remarks: ETN-97-011	**11A. Design Baseline Document?** [X] Yes [ ] No	**12. Major Assm. Dwg. No.:** H-2-91701
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15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	HNF-SD-WM-OTR-229		0	OPERABILITY TEST REPORT FOR CORE SAMPLE TRUCK # ONE FLAMMABLE GAS MODIFICATIONS	NA	1	1	1

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

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(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
3	6	Design Authority George Janicek	See Block 20		S7-12	1,2	1	CPO Ted Jarecki		9/8/97	S7-03
1,2	1	Design Agent Galen Wilson		8/8/97	S7-12	1,2	1	Proj. Mgr RM Boger		8/8/97	S7-12
1,2	1	Cog.Eng. Rick Freeman		8/7/97	S7-12						
1,2	1	Cog. Mgr. John Schofield		8/8/97	S7-12						
		QA									
		Safety									
		Env.									

18.	19.	20.	21. DOE APPROVAL (if required) Ctrl. No. N/A
JC Akers	RM Boger	GP Janicek	[ ] Approved
Signature of EDT Originator — Date: 8/8/97	Authorized Representative for Receiving Organization — Date: 8/8/97	Design Authority/ Cognizant Manager — Date: 9/5/97	[ ] Approved w/comments [ ] Disapproved w/comments

BD-7400-172-2 (05/96) GEF097

BD-7400-172-1

OPERABILITY TEST REPORT FOR CORE SAMPLE TRUCK # ONE FLAMMABLE GAS MODIFICATIONS

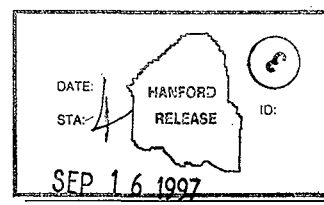
JC Akers
SGN Eurisys Services Corp., Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 620242 UC: 721
Org Code: 08E00 Charge Code: E51771
B&R Code: EW3120074 Total Pages: 24 25 kmb 9/15/97

Key Words: CORE, SAMPLE, TRUCK, STANDING ORDER, BIO, CST, Remote Latch Unit, RLU, FLAMMABLE GAS, Purge, Quill Rod, ETN-97-0011

Abstract: This report primarily consists of the original test procedure used for the Operability Testing of the flammable gas modifications to Core Sample Truck # One. Included are exceptions, resolutions, comments, and test results.

Release Approval 9/15/97
Release Approval Date



Release Stamp

Approved for Public Release

BACKGROUND

This report documents the testing of a modification to the Push Mode Core Sample Truck # 1 for operation in flammable gas tanks. The modification added a system to pressurize under the Shielded Receiver (SR) weather cover to prevent flammable gas from accumulating under the SR weather cover. The system also provides indication of the pressure level and an alarm for pressurization system failure.

SUMMARY

This report consists of the original, completed, test procedure used for the Operability Testing of the flammable gas modifications to the Push Mode Core Sample Truck # 1.

Prior to the Acceptance/Operability test the truck # 1 operations procedure (TO-080-503) was revised to be more consistent with the other core sample truck procedures and to include operational steps/instructions for the SR weather cover pressurization system. A draft copy of the operations procedure was used to perform the Operability Test Procedure (OTP). A Document Acceptance Review Form is included with this report (last page) indicating the draft status of the operations procedure during the OTP.

During the OTP 11 test exceptions were encountered. Of these exceptions four were determined to affect Acceptance Criteria as listed in the OTP, Section 4.7 ACCEPTANCE CRITERIA. The Acceptance Criteria are based on the design requirements specified in WHC-SD-WM-FDC-048, FUNCTIONAL DESIGN CRITERIA FOR CORE SAMPLING IN FLAMMABLE GAS WATCH LIST TANKS. The exceptions are summarized in the following table. A detailed list of exceptions and resolutions is in the OTP, Section 10.0, EXCEPTIONS/RESOLUTION DATA SHEET.

EXCEPTION NUMBER	ACCEPTANCE CRITERIA	DESCRIPTION OF EXCEPTION	DESCRIPTION OF RESOLUTION
1 & 7	NO	NITROGEN TRAILER INOPERABLE	NITROGEN TRAILER NOT REQUIRED, USED BREATHING AIR COMPRESSOR TO PERFORM TEST
2	NO	ELECTRICAL POWER DISTRIBUTION TRAILER (EPDT) NOT USED	EPDT NOT NEEDED, CONNECTED TRUCK DIRECTLY TO ELECTRICAL GENERATOR
3	YES	ELECTRICAL CORD INTERFERENCE & PURGE SUPPLY HOSE TO LONG	REROUTED ELECTRICAL CORD & SECURED HOSE
4 & 5	YES	PURGE SUPPLY HOSE TO SHORT DURING FULL TRAVERSE & BUNGEE CORD HOOK PINCHES HOSE	REPLACED WITH LONGER AND LESS RESTRICTIVE BUNGEE CORD
6	YES	SLEW TRAVEL IN BOTH DIRECTIONS STRETCHES & COLLAPSES HYDRAULIC HOSES & CONTACTS SAFETY RAIL & CONDUIT	ADDED A CAUTION BLOCK TO OPS PROCEDURE TO-080-503 REV. F TO NOT SLEW MORE THAN 2" IN ANY DIRECTION
8, 9 & 10	NO	GREEN PURGE LIGHT DIDN'T ILLUMINATE & ALARM LIGHT RESPONDED AT .8"H_2O INSTEAD OF .3"H_2O	REPAIRED AIR LEAKS PER ECN 631341, LEAKS IDENTIFIED BETWEEN THE SAMPLE HOIST BOX AND THE BASE PLATE
8a	NO	UNABLE TO VERIFY PRESSURE WITH INSTALLED GAUGE	USED CALIBRATED METER TO VERIFY PRESSURE & PRESSURE SWITCH TRIP SETTINGS (.4"-.6"H_2O)

CONCLUSION

All acceptance criteria, as listed in Section 4.7 ACCEPTANCE CRITERIA, has been met and all exceptions have been documented and satisfactorily resolved. The OTP was successfully completed and documented in Section 9.0, TEST COMPLETION SIGN-OFF.

Dg 4.(2).

MAY 06 1997 **ENGINEERING DATA TRANSMITTAL**

Page 1 of 1

1. EDT 619144

MASTER Copy

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) 8C460	4. Related EDT No.: N/A
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8. Originator Remarks: Operabiltiy Test Procedure for Truck #1		9. Equip./Component No.: H-2-91651
		10. System/Bldg./Facility: 200 General
11. Receiver Remarks: 11A. Design Baseline Document? [X] Yes [ ] No ETN-97-011 ES-97-223		12. Major Assm. Dwg. No.: H-2-91650
		13. Permit/Permit Application No.: N/A
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1	HNF-SD-WM-OTP-229	All	0	ACCEPTANCE/OPERA-BILITY TEST PROCEDURE, SAMPLING TRUCK ONE, FLAMMABLE GAS MODIFICATIONS	SQ	1	1	

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION
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1	/	Design Authority George Janicek		5/6/97	S7-12	3	/	CPO T.D. Jarecki		5/5/97	S7-03
1	/	Design Agent Galen Wilson		5/5/97	S7-12	1	/	Des. J.C. Akers	J.C. Akers	5/5/97	S7-12
1	/	Cog.Eng. Rick Freeman		5/5/97	S7-12						
1	/	Cog. Mgr. John Schofield		5/5/97	S7-12						
1	/	QA Mike McElroy		5-5-97	S7-07						
1	/	Safety Jeff Ranscheau		5-5-97	S7-07						
		Env.									

18. PR Reichelbaher
Signature of EDT Originator — Date

19. Authorized Representative for Receiving Organization — Date

20. R.M. Baga
Design Authority/ Cognizant Manager — Date

21. DOE APPROVAL (if required) Ctrl. No.
[ ] Approved
[ ] Approved w/comments
[ ] Disapproved w/comments

BD-7400-172-2 (05/96) GEF097

BD-7400-172-1

ACCEPTANCE/OPERABILITY TEST PROCEDURE, SAMPLE TRUCK ONE, FLAMMABLE GAS MODIFICATIONS

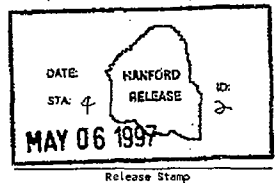
Paul Deichelbohrer
Numatec Hanford Co., Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 619144 UC: 721
Org Code: 8C460 Charge Code: N4H2B
B&R Code: EW3120074 Total Pages: 17 19 Rev 0 5/6/97

Key Words: Push Mode Sampling, Z-purge, nitrogen, burst disk

Abstract: Core Sampling Truck Number One was upgraded for use with flammable gas tanks. Principally, the upgrade consists of installation of a ~~nitrogen~~ gas purge of the truck's weather cover.

5/2/97



Release Approval 5/6/97 Date

Release Stamp

Approved for Public Release

TABLE OF CONTENTS

1.0 PURPOSE

The purpose of this system acceptance/operability test procedure is to provide instructions for system acceptance and operability testing of the push mode core sampler system modified for use on flammable gas tanks. This testing fulfills the applicable requirements of WHC-SD-WM-FDC-048, Section 5.9 and WHC-CM-6-1, EP-4.2.

Testing will be limited to testing the modifications completed on Core Sampler Truck 1 to install the Type Z pressurization system for shielded receiver weather cover and the modification of shielded receiver lifting frame to install stronger hydraulic cylinders.

2.0 SCOPE

System operability testing of the Push Mode Sampling System will verify that system design requirements, as well as functional and operational requirements, have been met. Testing will involve operating the Push Mode equipment to demonstrate acceptable operation of the Type Z pressurization system and shielded receiver lifting frame modification to perform tasks required during sampling of flammable gas tanks. Testing will also verify the compatibility of required ancillary equipment such as generator, breathing air compressor, and nitrogen trailer.

The test(s) will be performed in the "Dean Dome" located east of the 2704HV building.

3.0 RESPONSIBILITIES

Safety, QA, Characterization Project Operations (CPO), Characterization Engineering (CE), and Characterization Field Engineering (CFE) shall approve this test procedure (hereafter referred to as the OTP), prior to its release. Responsibilities are as follows:

Operations Test Director
Responsible for the overall performance of the OTP. Responsible for the proper conduct of operations for the entire test site as well as all personnel involved in the testing. Ensures the execution of all testing activities are within the scope of the OTP. Exercises stop work authority for unsafe conditions within the scope of the OTP. Directs actions to be taken to prevent injury to employees or damage to equipment. Acts through the push mode sampling PIC for the proper performance of all operations at the test site. Receives technical advice from CE and CFE engineers on system and equipment design parameters. Maintains cognizance of test exceptions as documented by the CFE Cognizant engineer and the resolution of same. Concurs with all changes and with the acceptability of the equipment modifications by signing the OTP.

Core Sampling PIC (Person In Charge)
Responsible for the assignment of personnel and directing the operation of the various systems. Controls configuration and access to the test area in order to maintain a safe environment. Aids the Cognizant Engineer in maintaining configuration control. Approves changes to the OTP in terms of operational steps or equipment configuration with concurrence of CE and CFE cognizant engineer and Operation Test Director. Conducts a pre-job safety meeting at the start of each shift during the performance of the OTP. Briefs the personnel on testing to be performed that day and associated hazards.

CFE Cognizant Engineer
Provides on-site technical expertise and advice to the PIC and Test director as required. Controls the sequence in which the OTP is conducted through the Test Director and with concurrence of CE. Maintains configuration control on the "Exception/Resolution Data Sheet." Resolves exceptions with the concurrence of CE and the assigned Quality Engineer for those exceptions relating to the items which initially required Quality verification. Concurs with the acceptability by signing the OTP.

Characterization Engineering (CE)
Provides on-site technical expertise and advice to the PIC and Test Director as required. Advises Cognizant Engineer and Test director on equipment capabilities, recommends test sequence changes, and test requirements. Responsible for issuing any Engineering Change Notices (ECN's) required to support maintaining configuration control during testing. Approves any changes to the OTP. Responsible for obtaining additional support from engineering. Reviews and approves test procedure and test report. Obtains Design Authority approval of test procedures and test report. Resolves any designer/project related deficiencies. These personnel may be from the CE organization or designated by CE management.

Core Sampling Operations Management
Responsible through the Operations Test Director for the overall testing program. Review and approves test procedures. Ensures Pre-Job safety meeting is held prior to test start. Monitors testing to extent approval may be given for satisfactory equipment operability.

Core Sampling Operators
Conducts testing according the OTP procedures directed by the Operations PIC. Notifies the PIC of concerns, exceptions and off-normal conditions during testing.

Quality Assurance
Reviews and approves test procedure to assure compliance with appropriate regulations. Resolves exceptions requiring quality verification jointly with CFE Cognizant Engineer. Quality verification of exceptions is only necessary for those exceptions relating to items which initially required Quality verification.

Safety
Reviews and approves test procedure to assure compliance with applicable regulations. Monitors testing as appropriate.

CPO Radiological Control
Supports testing according to the OTP procedure as directed by the Operations PIC. Notifies the PIC of concerns, exceptions and off-normal conditions during testing. Ensures work performed is within the scope of the applicable Radiological Work Permit (RWP).

4.0 INFORMATION

4.1 TEST GUIDANCE

Authorization for the implementation of this document is controlled by the associated Engineering Data Transmittal. Approval indicates that the testing called out in this procedure will verify the required performance of the equipment and provide the required protection for personnel.

Operability testing will be completed to confirm that the modified components are functionally acceptable and will not interfere with movement of the truck and drill rig as they operate in their expected range. Records of the testing will be documented in the left margin and supplied tables within the text of this procedure.

Initial instrument calibrations shall be conducted prior to Operability testing. Calibrations will not be reconfirmed during ATP/OTP testing.

Discrepancies, deviations, or irregularities involving the test procedure or equipment performance are to be noted, as they occur, on the "Exception/Resolution Data Sheet". An exception number shall be noted in the procedure margin, next to the related test section or step. These exceptions shall be jointly resolved between the Cog Engineer, the Design Authority, the Test Director, and the assigned Quality Assurance Representative. Quality verification of exceptions is only necessary for those exceptions relating to items which initially required Quality verification. All resolutions to the exceptions must be agreed upon by the responsible personnel, documented on the exception list and initialed. Hand written exceptions sheets may be replaced, if replacement sheets are initialed.

No testing shall be done which directly involves faulty equipment. However, at the discretion of the Cog Engineer and with the concurrence of the Test Director, CE and the PIC, tests may proceed on equipment which is not affected by faulty equipment. Any test exceptions caused by equipment failure not associated, directly or indirectly, with the system modification for flammable gas tank sampling, should be dispositioned as "general maintenance" on the Exception/Resolution Data Sheet.

If, due to testing circumstances, on-site modifications of the test procedures are warranted, written changes, ("redlines") maybe made by the core sampling

PIC with the written approval (initialing in the left margin) of the Test Director, Cog Engineer and DED. These changes must also be documented on the Exception/Resolution Data sheet prior to test completion sign-off. Amendments shall be per instructions in WHC-CM-6-1, "Standard Engineering Practices", EP-4.2, "Testing Requirements, "Rev. 5, Change 3.

Revised operating procedures, written for Push Mode Sample Truck (PMST) operations in flammable gas tanks, are referenced for use within this OTP. If this procedure is not released, The procedure will be approved for use in OTP testing by the Test Director, Cog Engineer and industrial safety and procedures will be marked as "DRAFT" to prevent unauthorized use in tank farms. The same procedures will be revised for operational use after a formal procedure validation and finalized procedure approval and release. Procedure validations will be performed in parallel with OTP testing, but are not part of any OTP acceptance criteria and are not required for OTP completion sign off. Possible procedure change(s) can be relined be the Cognizant Engineer and do not require the use of the Exception/Resolution Data Sheet.

4.2 REFERENCES

HNF-SD-WM-ETP-221, Rev. 0	Engineering Task Plan for Modifying Core Sampler Truck #1 & 2 for Operation in Flammable Gas Tank
WHC-SD-WM-FDC-048, Rev. 0	Functional Design Criteria for Core Sampling in Flammable Gas Watch List Tanks
WHC-CM-6.1; EP-4.2, Rev. 5	Standard Engineering Practices; Testing Requirements

4.3 SAFETY ISSUES

To reduce the possibility and severity of injury, all persons in the vicinity of the test equipment must be aware of the following concerns:

WARNING - Exercise caution concerning loose clothing and pinch points while working on or near rotating equipment.

WARNING - Personal protective equipment shall be used during testing as required by Job Hazard Analysis.

WARNING - At times, nitrogen gas will be supplied to the sample truck at high pressure. Breaking containment of a pressurized cavity will cause a rapid release of gas. All indications must be observed so that each cavity is vented prior to being opened.

WARNING - Avoid all contact with liquid nitrogen. The nitrogen in the liquid nitrogen support trailer nitrogen tank and vaporizer supply line is a liquid and is stored at high pressure and extremely low

temperatures (-320°F). Exposure will freeze skin, causing severe "burns".

WARNING - Pressure relief venting of the propane supply on the nitrogen trailer can occur unexpectedly. The vent line for the propane is the copper tubing on the right side of the trailer and the outlet is below and at the rear of the trailer. All flammability warnings posted on the nitrogen tailer must be observed.

WARNING - If engines need fuel, refuel only when the engines are cool.

WARNING - Stand clear of exhaust pipes on the test equipment.

WARNING - The warning sirens on the sample truck are very loud.

NOTE - Under normal conditions, periodic venting of the nitrogen trailer will occur. Venting is automatic when excessive pressure builds in the nitrogen storage tank. The vent outlet is located near the right rear of the trailer on top of the enclosure.

4.4 RADIATION AND CONTAMINATION CONTROL

All testing will be controlled to prevent contamination release. All test activities must comply with the requirements listed in the RWP issued for this test.

4.5 QUALITY ASSURANCE

Quality Assurance shall approve the Operability Test Procedure prior to its release.

4.6 TYPE Z PRESSURIZATION SYSTEM

When the purge pressure in the weather cover is too low (less than 0.5 in H_2O) an audible alarm sounds and visual alarm will illuminate. To silence the audible alarm, press the "Acknowledge" button. Also, there is a manual lamp & alarm test button.

4.7 ACCEPTANCE CRITERIA

Items to be tested in this ATP/OTP verify that the Type Z pressurization system meets design requirements specified in WHC-SD-WM-FDC-048, Functional Design Criteria for Core Sampling in Flammable Gas Watch List Tanks, as outlined in Table 1. This ATP/OTP also verifies that basic operation functions of the push mode sampling truck are not inhibited by piping and other components of the Type Z Pressurization System and modifications to the shielded receiver lifting frame.

Table 1: Acceptance Criteria

SYSTEM	CRITERIA	DCM[1] ITEM	ATP/OTP STEP
Z-PURGE	Protected Enclosure shall be maintained at a positive pressure of at least 25 Pa (0.1 in. water)	2.1	7.4.3.8 and 7.5.5.9
	An alarm will indicate failure of protective gas supply to maintain required pressure	2.2	7.4.3.4 and 7.5.5.5
	Alarms and displays shall be located where they can easily be reached.	2.2.2	7.7.1
	Indicating lights shall be easily visible in bright and hazy sunlight.	2.2.3	7.7.2
	Verify operating procedure includes sniffing of weather cover before initial startup	3	7.7.4
	Verify label on side of weather cover says "Warning - Pressurized Enclosure"	2.4	7.7.3
	Verify operation procedure provides for system shutdown after alarm "SEE REDLINE"	6	7.7.4
	Movement of drill rig ie. full traverse, slew and rotation is not restricted.	N/A	Sec. 7.3
Sample Hoist Box Vent	Verify HEPA filter installation for purge gas exhaust	10	7.7.5
Shielded Receiver Lifting Frame	Shielded Receiver movement is not restricted due to installation of hydraulic cylinders	N/A	7.3.2.13
PMST	Verify that modification have not changed any control functions.	N/A	Sec. 7.0
	Able to interface with required ancillary equip	N/A	7.1.2, 7.4 & 7.5

[1] DCM ITEM refers to Design Compliance Matrix item as listed in HNF-SD-WM-ETP-221. DCM items are for reference only and are not required for this ATP/OTP

Each step shall be evaluated and signed off by the cognizant engineer as well as Operations to verify that the equipment is acceptable for field use except for the steps that are marked with an asterisk. These steps are operational steps only and are not required for acceptance.

All persons responsible for signing the test completion sign-off sheet shall perform a test review of the completed procedure to verify technical acceptability of all data and resolution of exceptions.

5.0 RECORDS

Pertinent operating conditions will be documented when requested in the OTP. Records for the testing of equipment, (Section 7), will be recorded within the procedure. The operator, (and other test personnel requested to do so), will initial in the space provide in the left-hand margin upon satisfactory completion of the designated tasks. All persons initialling within this procedure (including the Exception/Resolution Data Sheet) will initial and sign the Signature Log Sheet.

All test data will be released, as an Operability Test Report, after the conclusion of OTP testing.

6.0 PREREQUISITES

6.1 EQUIPMENT AND SUPPLIES

EQUIPMENT UNDER TEST	TEST SUPPORT SUPPLIES
Push Mode Sampling Truck ~~Nitrogen Trailer~~ OK TRAILER IS STAGED Electrical Generator ~~Distribution Trailer~~ Breathing Air Compressor	Support Truck (optional)

6.2 PROCEDURES

NOTE: Some of the referenced procedures may not be used. This ATP/OTP allows either the use of the nitrogen trailer or the breathing air compressor.

TO-020-055 Operate The Aeroflow Model 2AN61 Breath Air Compressor

TO-020-056 Operate The Aeroflow Model 2AN137 Breathing Air Compressor

TO-020-451 Setup and Takedown Of Core Sample Systems

TO-020-910 Perkins 3.125 Series Generator Set, Operating Procedure

TO-060-345 Liquid Nitrogen Support Trailer and Indeeco Nitrogen Heater Operations

TO-080-503 Perform Push Mode Core Sampling of Hydrogen/flammable Gas Watchlist Waste Storage Tanks

6.3 CONDITIONS

- The Job Hazard Analysis must be complete prior to test start.
- Pre-job safety meetings shall be held at the start of each shift prior to testing.
- Calibration and PM's shall be current and complete prior to testing effected equipment.
- All work packages for installation/functional check of flammable gas modifications must be work-complete prior to related testing.

7.0 TEST PROCEDURE (EQUIPMENT)

7.1 EQUIPMENT IDENTIFICATION AND SETUP

NOTE: The following steps are intended to verify that fittings and receptacles mate properly for ancillary equipment that is used for this ATP/OTP. If a connection was made previously, VERIFY connection and initial step. Refer to the setup procedure listed in 6.2 if connections or grounding details are required.

OP/CE DHA. END 7.1.1 RB 5/19/97 RB 5/20/97 POSITION Push Mode Truck equipment listed in the table below, in a convenient location to allow testing.

OP/CE DHA. END 7.1.2* RB 5/19/97 RB 5/20/97 PIC or Cog Engineer, RECORD the identification numbers for the major components used in this procedure in the table below. Use the blank lines to record any changes made (record test sections effected by the change).

COMPONENT	IDENTIFICATION [2] NUMBER
Push Mode Core Sample Truck	PMCST#1 HO-4744
Liquid Nitrogen Trailer	RB 5/20/97 N/A HO-64-5170
Electrical Power Distribution Trailer (EPDT)	N/A JR 5/19/97
Electrical Generator	KATOLIGHT HO-74-4761 / SPERRANE DIESEL HO-74-5143
Support Truck	N/A JR 5/19/97
Breathing Air Compressor (BAC)	HO-64-4964

RB 5/19/97 RB 5/20/97

* For equipment identification, use HO# or other unique identifier

OP/CE ___. ___ 7.1.3* CONNECT the electrical grounding wires from the generator ~~and Electrical Power Distribution Trailer (EPDT)~~ to the existing system ground east of the dome.

OP/CE ___. ___ 7.1.4* ~~CONNECT the EPDT to the generator using the cable reel on the EPDT.~~

OP/CE ___. ___ 7.1.5* CONNECT the 120/240 volt power cable to the sample truck from the EPDT. The receptacle is on the driver's side of the truck, near the ladder on the stationary platform.

OP/CE ___. ___ 7.1.6* CONNECT the 120 volt power cable from the nitrogen trailer to the generator if nitrogen trailer is used.

7.2 CORE SAMPLE TRUCK START UP

NOTE: Whenever truck electronics are powered up without establishing nitrogen supply pressure and type Z pressurization system, The PURGE FAIL alarm will sound. This alarm should be acknowledged and no further action taken prior to testing in sections 7.4 and 7.5.

OP/CE ___. ___ 7.2.1* OPERATE the generator as required through testing (See operating procedures listed in 6.2)

OP/CE ___. ___ 7.2.2* ACTIVATE all breakers on the POWER DISTRIBUTION panel, located on the control console.

OP/CE ___. ___ 7.2.3 ACKNOWLEDGE the SR Purge Fail alarm by pressing the Acknowledge button on the control console.

ACCEPTANCE CRITERIA: Alarm silences

OP/CE ___. ___ 7.2.4* START the drill rig engine as per operation procedure listed in 6.2 (operate the drill engine as required throughout testing.)

7.3 DRILL RIG MANEUVERING

NOTE: The sample truck is raised by hydraulic rams, located at the front and rear of the truck, and is leveled busing portable hand levels. The center jack, consisting of two additional rams located on each side of the truck, are used to stabilize the truck for platform rotation. The center jacks are not designed to withstand heavy loads, and should only be lowered after lowering the front and rear lifting jacks. When leveling the truck, lower the rams slowly so that the truck is lifted uniformly. The hydraulic controls associated with leveling are the 4-way manual control valves and turn valves which control flow to each of the jacks.

OP/CE _____, _____ 7.3.1* LEVEL the sample truck by referring to procedure TO-020-451. If truck is already level, omit step.

WARNING: For the following platform rotation, drill rig movement, and throughout testing, always ensure that the drill head, Shielded Receiver (SR), and drill rig are positioned to avoid equipment damage prior to moving the rotating platform. Whenever practical, the drill head and SR should be in the up position and the drill rig centered before making any rotation.

7.3.2 MANEUVERING STEPS

OP/CE _____, _____ 7.3.2.1 VERIFY the FAST ROTATION mode in the CW direction. Rotate completely to limit.
ACCEPTANCE CRITERIA: Controls function correctly

OP/CE _____, _____ 7.3.2.2 VERIFY that the hose and tubing installed for Type Z pressurization system does not cause binding or kinking.
ACCEPTANCE CRITERIA: Visual inspection shows no problems

OP/CE _____, _____ 7.3.2.3 VERIFY the FAST ROTATION mode in the CCW direction. Rotate completely to limit.
ACCEPTANCE CRITERIA: Controls function correctly

OP/CE _____, _____ 7.3.2.4 VERIFY that the hose and tubing installed for Type Z pressurization system does not cause binding or kinking.
ACCEPTANCE CRITERIA: Visual inspection shows no problems

OP/CE _____, _____ 7.3.2.5 VERIFY the SLOW ROTATION mode in both the CW and CCW direction.
ACCEPTANCE CRITERIA: Controls function correctly

OP/CE _____, _____ 7.3.2.6* ROTATE the platform so that the SR is at the rear of the truck.

OP/CE _____, _____ 7.3.2.7 HOLD the TRAVERSE switch to FORWARD to fully extend the SR end of the drill rig.
ACCEPTANCE CRITERIA: Controls function correctly

OP/CE _____, _____ 7.3.2.8 VERIFY that the hose and tubing installed for Type Z pressurization system does not cause binding or kinking.
ACCEPTANCE CRITERIA: Visual inspection shows no problems

OP/CE _____, _____ 7.3.2.9 HOLD the TRAVERSE switch to REVERSE to fully retract the SR end of the drill rig.

ACCEPTANCE CRITERIA: Controls function correctly

(5) OP/CE ___. ___ 7.3.2.10 VERIFY that the hose and tubing installed for Type Z pressurization system does not cause binding or kinking.
ACCEPTANCE CRITERIA: Visual inspection shows no problems

OP/CE ___. ___ 7.3.2.11* EXTEND the SR over the edge of the platform.

OP/CE ___. ___ 7.3.2.12 VERIFY the SR UP/DOWN operation on the console or pendant while observing for hose and tubing kinking or binding. Leave SR in up position.
ACCEPTANCE CRITERIA: Controls function correctly

(5) OP/CE ___. ___ 7.3.2.13 VERIFY that the hose and tubing installed for Type Z pressurization system and for modifying lifting frame hydraulic cylinders does not cause binding or kinking.
ACCEPTANCE CRITERIA: Visual inspection shows no problems

OP/CE ___. ___ 7.3.2.14* ROTATE the platform to position the drill rig to the rear.

(6) OP/CE ___. ___ 7.3.2.15 VERIFY the slew operation. (The drill should slide about 4 inches from center each way.) CONTROLS FUNCTION SEE PROBLEM (6)
ACCEPTANCE CRITERIA: Controls function correctly

(7) 7.4 TYPE Z PRESSURIZATION SYSTEM TEST WITH NITROGEN N/A USED B.A.C.

OP/CE ___. ___ 7.4.1 CONNECT the nitrogen supply line from the nitrogen trailer to the sample truck.
ACCEPTANCE CRITERIA: Compatible connectors

O/CE ___. ___ 7.4.2* FOLLOW the operating procedure (listed in 6.2) to set up and start the nitrogen trailer system.

7.4.3 TEST the Type Z Pressurization System as follows:

N/A THIS SECTION

NOTE: The controls are located on the Shielded Receiver Weather Cover Purge Panel located in the Control Console.

(7) OP/CE ___. ___ 7.4.3.1 PUSH and HOLD lamp & alarm test button and VERIFY Purging Lamp (Green light), Purge Fail lamp (red) and audible alarm activate. RELEASE lamp & alarm test button. Press Acknowledge button to silence alarm.
ACCEPTANCE CRITERIA: Test button causes activation of lights and alarm and acknowledge button silences alarm

OP/CE____, ____7.4.3.2* ENSURE the Type Z Pressurization System metering valve, located on the shielded receiver lifting frame, is fully open.

OP/CE____, ____7.4.3.3* VERIFY pressure reading on Type Z Pressurization System pressure gage is above 0.5 inches of water, gauge and PURGING light (green) illuminates.

OP/CE____, ____7.4.3.3* CLOSE the metering valve to reduce pressure to approximately 0.3 inches water gauge.

OP/CE____, ____7.4.3.4 VERIFY that alarm sounds and the PURGE FAIL alarm light (RED) illuminates. GREEN LIGHT GOES OUT.
ACCEPTANCE CRITERIA: Alarm sounds and red light illuminates upon loss of positive pressure

N/A THIS SECTION

OP/CE____, ____7.4.3.5* OPEN metering valve and record pressure when PURGING light illuminates.

PRESSURE _____

OP/CE____, ____7.4.3.6 When pressure reading on Type Z Pressurization System pressure gauge is above 0.5 inches water gauge, VERIFY that the SR WEATHER COVER PURGE FAIL alarm light (red) goes out and the PURGING light (green) illuminates.
ACCEPTANCE CRITERIA: When greater than 0.5 inches of water pressure is maintained, green light illuminates and red light goes out

OP/CE____, ____7.4.3.7 PRESS the ALARM ACKNOWLEDGE button to silence alarm.

ACCEPTANCE CRITERIA: Alarm silences

OP/CE____, ____7.4.3.8 RECORD pressure reading from pressure gauge.

PRESSURE READING _____
ACCEPTANCE CRITERIA: Pressure is greater than 0.5 inches water

7.5 TYPE Z PRESSURIZATION SYSTEM TEST WITH AIR

OP/CE N/A ____7.5.1 FOLLOW the operating procedure (listed in 6.2) to shut down the nitrogen trailer system.

OP/CE ____7.5.2 DISCONNECT the Nitrogen trailer from the truck.
ACCEPTANCE CRITERIA: Compatible connectors

OP/CE ____7.5.3 CONNECT the Breathing Air Compressor (BAC) to the truck using the adapter hose.
ACCEPTANCE CRITERIA: Compatible connectors

OP/CE [illegible] BND 5/20/97 7.5.4* FOLLOW the operating procedure (listed in 6.2) to set up and start the BAC.

7.5.5* TEST the Type Z Pressurization System as follows:

NOTE: The controls are located on the Shielded Receiver Weather Cover Purge Panel located in the Control Console.

OP/CE [illegible] BND 5/20/97 7.5.5.1 PUSH and HOLD lamp & alarm test button and VERIFY Purging Lamp (Green light), Purge Fail lamp (red) and audible alarm activate. RELEASE lamp & alarm test button. Press Acknowledge button to silence alarm.

ACCEPTANCE CRITERIA: Test button causes activation of lights and alarm and acknowledge button silences alarm

OP/CE [illegible] BND 5/20/97 7.5.5.2* ENSURE the Type Z Pressurization System metering valve, located on the shielded receiver lifting frame, is fully open.

(8) OP/CE WCT RJ 5/21/97 7.5.5.3* VERIFY pressure reading on Type Z Pressurization System pressure gage is above 0.5 inches of water, gauge and PURGING light (green) illuminates..

(8a) RJ 5/20/97 RJ 5/21/97 BND 5/21/97

(9) OP/CE WCT BND 7.5.5.4* CLOSE the metering valve to reduce pressure to approximately 0.3 inches water gauge.

RJ 5/21/97

OP/CE WCT BND 7.5.5.5 VERIFY that alarm sounds and the PURGE FAIL alarm light (RED) illuminates.

ACCEPTANCE CRITERIA: Alarm sounds and red light illuminates upon loss of positive pressure

(10) OP/CE WCT RJ 5/21/97 7.5.5.6* OPEN metering valve and record pressure when PURGING light illuminates.

PRESSURE .800

OP/CE WCT RJ 5/21/97 7.5.5.7 When pressure reading on Type Z Pressurization System pressure gauge is above 0.5 inches water gauge, VERIFY that the SR WEATHER COVER PURGE FAIL alarm light (red) goes out and the PURGING light (green) illuminates.

ACCEPTANCE CRITERIA: When greater than 0.5 inches of water pressure is maintained, green light illuminates and red light goes out

OP/CE WCT RJ 5/21/97 7.5.5.8 PRESS the ALARM ACKNOWLEDGE button to silence alarm.

ACCEPTANCE CRITERIA: Alarm silences

OP/CE WCT RJ 5/21/97 7.5.5.9 RECORD pressure reading from pressure gauge

PRESSURE READING .582

ACCEPTANCE CRITERIA: Pressure is greater that 0.5 inches water

7.6 SHUT DOWN

OP/CE [illegible] [illegible] 5/20/97 7.6.1 FOLLOW the operating procedures (listed in 6.2) to shut down the PMST and BAC.

7.7 OTHER VERIFICATIONS

OP/CE [illegible] [illegible] 5/20/97 7.7.1 Verify that alarms and displays can be easily reached
ACCEPTANCE CRITERIA: Subjective verification

OP/CE [illegible] [illegible] 5/20/97 7.7.2 Verify indicating lights are easily visible
ACCEPTANCE CRITERIA: Visual verification

OP/CE [illegible] [illegible] 5/20/97 7.7.3 Verify weather cover is labeled "Warning - Pressurized Enclosure"
ACCEPTANCE CRITERIA: Visual verification

OP/CE [illegible] [illegible] 5/20/97 7.7.4 Verify operating procedure provides for sniffing before energizing electrical equipment and system ALARM RESPONSE ~~after shutdown after~~ alarm activates. PRIOR SNIFFING 5.1.27
ACCEPTANCE CRITERIA: Visual verification SHUTDOWN 5.7

OP/CE [illegible] [illegible] 5/20/97 7.7.5 Verify HEPA filter installation.
ACCEPTANCE CRITERIA: Visual verification

THE SYSTEM IS NOT REQUIRED TO BE SHUTDOWN WHEN AN ALARM IS DETECTED.
SEE NFPA 496 SECTION 2-8.1 [illegible] 5/20/97 [illegible] 5/20/97

8.0 SIGNATURE LOG

All persons initialing or signing within this procedure (including all data sheets and the test completion sign-off sheet) shall record their signature, initials and printed name in the table below.

Name (Print)	Company/organization	Signature	Initial
For Record Only			
RICK FREEMAN	NHC / CFE	Rick Freeman	RF
TD JANECKI	LMHC/CPO		TDJ
Blinn L Hall	LMHC/CPO	Blinn L Hall	BL
FA Schroeder	LMHC /CPO	FA Schroeder	FS
~~R Frank Frost~~	~~LMHC/ CPO~~ 5-12-97		
R. FRANK FROST	LMHC/ CPO	R Frank Frost	RFF
R.N. DALE	NHC/CFE	R.N. Dale	RND
D.C. HARTLEY	LM/ CPO	D.C. Hartley	DCH
R.A. ARNDT	LM/ CPO	R.A. Arndt	RAA
M.C. JONES	LM/CPO	M.C. Jones	MCJ

9.0 TEST COMPLETION SIGN-OFF

All system acceptance and operability tests have been completed as delineated in this ATP/OTP. All exceptions have been documented and resolved as indicated on the Exception/resolution Data Sheet(s). The core sample truck and associated equipment can be operated in a safe manner and are accepted as meeting all test criteria required for push mode operation in flammable gas tanks and has met the acceptance criteria denoted in section 4.7.

Signature	Date	
Operations PIC	5-21-97	
Truck Sampling Manager	5-22-97	
X Quality Assurance	5-21-97	X WITNESS STEPS 7.3.1, 7.3.2.5, 7.3.2.6 AND 7.3.2.12. RGG 5-20-97
Safety	5-21-97	
Cognizant Engineer	5/21/97	
CFE Engineering Manager	5/22/97	
Design Authority	5/22/97	+ Witnessed Testing John W. Wilson 5/24/97
Operations Test Director	5/22/97	

10.0 EXCEPTIONS/RESOLUTION DATA SHEET

Exception Number	Step Number	DESCRIPTION OF PROBLEM	RESOLUTION TO PROBLEM	APPROVAL INITIALS
01 *	6.1	Distribution trailer not used.	Nitrogen trailer not required.	
02 *	7.1.4, 7.1.5	Electrical Power Distribution Trailer (EPDT) not used.	Connected truck directly to generator.	
03	7.3.2. 13	A. Pressure switch electrical cord interference. B. Purge supply hose to base plate too long.	A. Adjusted/reroute electrical cord. B. Secured hose.	
04	7.3.2. 8	Purge supply hose too short during full outward traverse of longyear.	Replaced with a longer and less restrictive bungee cord.	
05	7.3.2. 10	Bungee cord hook pinches purge supply hose.	Replaced with a longer and less restrictive bungee cord.	
06	7.3.2. 15	Slew travel in both directions stretches and collaspes hydraulic hoses, makes contact with safety rail and electrical conduit.	Added a caution block to Ops. proc. TO-080-503 Rev. F to NOT slew more than 2" in any direction.	
07 *	7.4	Nitrogen trailer inoperable.	Skipped this section. Perform step 7.4.1 & 7.5.2. Use breathing air compressor to perform test, section 7.5	
08 *	7.5.5. 3	Green light did not illuminate. Plugged HEPA filters and green light came on.	Repaired air leaks per ECN 631341. Leaks identified between the sample hoist box and the base plate.	

* NOT AN ACCEPTANCE CRITERIA.

09 *	7.5.5.4	Alarm and light responded at 0.8 vs. 0.3.	Repaired air leaks per ECN 631341. Leaks identified between the sample hoist box and the base plate.	
10 *	7.5.5.6	Purge light does not illuminate.	Repaired air leaks per ECN 631341. Leaks identified between the sample hoist box and the base plate.	
8a *	7.5.5.3	Unable to verify pressure with installed gauge.	Used a calibrated meter to verify pressure and verified pressure switch settings are within calibration range (.4"-.6"H2O).	

* NOT AN ACCEPTANCE CRITERIA.

DOCUMENT ACCEPTANCE REVIEW FORM

Page 1 of 1

N/A	TF-97-0431	SQ
Procedure Change Number	USQ Screening No.	Approval Designator

TO-080-503
Document No.

E-0 to F-0
Rev./Mod.

Prepared By

N. L. Forsman
Name

Plant Engineer/CPO
Title/Organization

[X] Plant Operating Procedure
[ ] Operator Round Sheet
[ ] Criticality Specifications
[ ] Other Type Document
[ ] Alarm Response Procedure
[ ] Facility Sampling Schedule
[ ] Maintenance Procedure
[ ] Operating Specification Document (Requires Checklist)

[X] New or Revised - Full Review Required
[ ] Procedure Change Authorization
[ ] Administrative Change

PUSH MODE SAMPLING WITH TRUCK #1
Document Title

[ ] Procedure Changes/Changed Pages/Summary of change Procedure was revised.

PROCEDURE REVIEWERS SIGNATURES

DOCUMENT IS ACCEPTABLE DRAFT

As Is	With Changes Noted	(Signature)	(Print Name)	(Title/Org)	(Date)
		(Signature - Certified Operator/Maintenance Technician) Ensures that the procedure has been field validated and comments incorporated.			
X		(Signature - QA Engineer)	M. L. McElroy	CPQA	5-7-97
X		(Signature - Safety Engineer)	J. A. Ranschau	CPQRS	5-7-97
X		(Signature - Shift Manager or Operations Support Manager) Verifies documentation is complete, including Change Summary Signature Sheet, and ensures Radiological review is complete or marks Radiological Controls as N/A.	T. D. Jarecki	Shift Mgr	5/7/97
		(Signature - Radiological Controls)	K. P. Mortensen		
		(Signature - Other)			
		(Signature - Engineering Manager)	J. S. Schofield		
X		(Signature - Cognizant Engineer) Ensures that the technical aspects of the procedure are correct, and that the procedure has been reviewed per the approval designator. Enters the USQ number.	R. D. Freeman	C.E. / CFE	5/7/97

PROCEDURE WRITER

(Signature) N. L. Forsman (Print Name) PE/CPO (Title/Org) (Date)

APPROVAL AUTHORITY

(Signature) J. S. Lee (Print Name) (Title/Org) (Date)

FOR OTP USE ONLY