

JUL 03 2001

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT 629117

2. To: (Receiving Organization) Distribution		3. From: (Originating Organization) DST Life Extension Projects		4. Related EDT No.:	
5. Proj./Prog./Dept./Div.: DST Annulus Pump Removal <i>SYSTEM 6/24/01</i>		6. Design Authority/Design Agent/Cog. Engr.: C. E. Shieler		7. Purchase Order No.: N/A	
8. Originator Remarks:				9. Equip./Component No.: N/A	
11. Receiver Remarks: 11A. Design Baseline Document? <input type="checkbox"/> Yes <input type="checkbox"/> No				10. System/Bldg./Facility: N/A	
				12. Major Assem. Dwg. No.: N/A	
				13. Permit/Permit Application No.: N/A	
				14. Required Response Date: N/A	

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	RPP-8385		0	Acceptance for Benefical	N/A	2	1	
				Use Plan for DST				
				Annulus Emergency				
				System				

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

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)									
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature (L) Date (M) MSIN
		Design Authority							
		Design Agent							
X 1	1	Cog. Eng.	<i>Don Koberger</i>	7/2/01	SS-13				
2	1	Cog. Mgr.	C. E. Shieler	6/24/01	S6-17				
		QA							
		Safety							
		Env.							

18. <i>D. G. Hert</i> Signature of EDT Originator <i>6/26/01</i> Date		19. _____ Authorized Representative for Receiving Organization Date		20. X <i>Don Koberger</i> Design Authority/Cognizant Manager <i>7/2/01</i> Date		21. DOE APPROVAL (If required) Ctrl No. _____ <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments	
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DISTRIBUTION SHEET

To
DISTRIBUTION

From
DST Life Extension Projects

Page 1 of 1

Date June 26, 2001

Project Title/Work Order

EDT No. 629117

RPP-8385, Rev 0, Acceptance for Beneficial Use (ABU) Plan for DST

[illegible]

ACCEPTANCE FOR BENEFICIAL USE (ABU) PLAN FOR DST ANNULUS EMERGENCY PUMPING SYSTEM

C. E. Shipler

CH2M Hill Hanford

Richland, WA 99352

U.S. Department of Energy Contract DE-AC27-99RL14047

EDT/ECN: 629117

UC: N/A

Cost Center: 7K400

Charge Code: 111273

B&R Code: N/A


Total Pages: 28

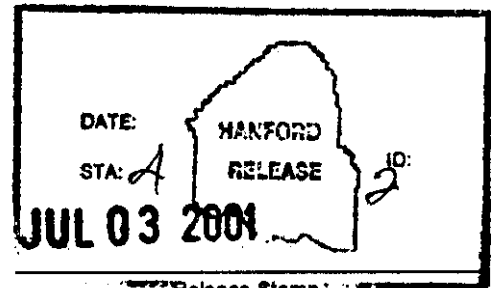
Key Words: DST Annulus, Acceptance for Beneficial Use

Abstract: This document is to facilitate the transfer of the DST Annulus Emergency Pumping System. This document describes the Project deliverables that will allow Tank Farms Operations to deploy a pump and transfer system for timely removal of leaked waste from a Double Shell Primary Tank into the annulus.

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Release Approval Date



Approved For Public Release

**ACCEPTANCE FOR BENEFICIAL USE (ABU) PLAN
FOR
DST ANNULUS EMERGENCY PUMPING SYSTEM**

ACCEPTANCE FOR BENEFICIAL USE (ABU) PLAN
FOR
DST ANNULUS EMERGENCY PUMPING SYSTEM



C. E. Shipler, Mgr. DST Life
Extension Maintenance & Upgrade Projects

6/15/01

Date



R. J. Brown, Mgr. Transfer &
Retrieval Operations

6/26/01

Date



D. W. Reberger, DST Systems
Engineering

6/19/01

Date

ACCEPTANCE FOR BENEFICIAL USE (ABU) PLAN FOR DST ANNULUS EMERGENCY PUMPING SYSTEM

Table of Contents

1.0 INTRODUCTION

2.0 PURPOSE

3.0 ABU DELIVERABLES

- 3.1 Engineering Design
- 3.2 Deployment Plans
- 3.3 Storage Trailer
- 3.4 Equipment and Parts
- 3.5 Operational and Maintenance Documentation
- 3.6 Training

4.0 ABU COMPLETION

5.0 REFERENCES

Appendix A: Interoffice Correspondence, DST Annulus Pump, “Exemption from the Requirements of the Operational Acceptance Procedures” CCS00000-01-02, dated June 5, 2001.

Appendix B: ABU for SSC’s for DST Annulus Emergency Pumping System – Check list

Appendix C: List of Drawings

Appendix D: Parts Inventory – Trailer HO-64-7008

Appendix E: Parts to Fabricate

Appendix F: Operational and Maintenance Documentation

ACCEPTANCE FOR BENEFICIAL USE PLAN FOR DST ANNULUS EMERGENCY PUMPING SYSTEM

1.0 INTRODUCTION

There are 177 underground waste-storage tanks in the Hanford 200 East and 200 West Areas. There are 149 Single Shell Tanks (SSTs) and 28 Double Shell Tanks (DSTs). This plan pertains only to the DSTs, which are located in the **AN, AP, AW, AY, and AZ Farms** in 200 East and the **SY Farm** in 200 West.

All DSTs are similar in design and each has a capacity of approximately 3.8 million liters, or 1 million gallons. DSTs consist of a carbon steel primary tank and a carbon steel secondary tank encased by a protective reinforced concrete wall. The primary tanks contain a mixture of liquid, sludge, and salt cake waste with both radioactive and chemically toxic hazardous constituents. Liquids exist as supernate (liquid above solids) and interstitial liquid (liquid filling the void between solids) in the tanks. The annulus, the space between the primary and secondary tanks, is designed as a “safety catch basin” in case of a leak from the primary tank.

While the probability and risk of a primary DST leaking is very low, there is a contractual responsibility to be able to respond to such a leak in an effective and timely manner. Regulations at the federal level, 40 CFR 265.193(c) (3), and state level, WAC 173-303-640(4)(c)(iii), require “a leak detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence or release of dangerous waste or accumulated liquid in the secondary system within 24 hours, or at the earliest practical time.” For the hazardous nature of any leak into the annulus, necessary safety precautions, and magnitude of effort of effort required for compliance, the “earliest practical time to pump” has been determined to be 10 days as stated in RPP-5842, “Time Deployment Study.”

2.0 PURPOSE

This document is to facilitate the transfer of the DST Annulus Emergency Pumping System, from CH2M Hill, Hanford Group, Inc. (CHG) Double Shell Tank (DST) Life Extension Maintenance and Upgrade Projects to CHG DST Farm Operations. The document describes the project deliverables that will allow Tank Farm Operations to deploy a pump and transfer system for timely removal of leaked waste from a Double Shell Primary Tank into the annulus. The plan is in accordance with procedure HNF-IP-0842, IV, 3.12, “Acceptance of Structures, Systems and Components (SSCs) for Beneficial Use.” The checklist against the procedure requirements is in Appendix B, ABU for SSCs for DST Annulus Emergency Pumping System Required Documents Check list.

3.0 ABU DELIVERABLES

To allow DST Farm Operations to respond in the required timely manner in the event there is a leak into an annulus tank, the following deliverables constitutes the necessary engineering design; deployment plans; storage facilities; equipment and parts; operational and maintenance documentation, and training.

3.1 Engineering Design

The design for the DST Annulus Emergency Pumping System is complete. Drawing **H-14-104118** gives the drawing list and area map. The set of drawings in the list cover the design of the electrical skid, submersible pumps, air driven pumps and individual drawings for each DST Farm for the pump and jumper assemblies. In addition there is a separate drawing for the cover plates, **H-14-104655**. The design takes into account variations in configuration between tank farms, as mentioned in section **1.0** INTRODUCTION. For example, there are two (2) flange assembly configurations, one for the **AN**, **AP**, **AW**, and **SY** Farms (**AN** configuration) and one for the **AY** and **AZ** Farms (**AZ** configuration). Appendix C gives a list of Drawings.

3.2 Deployment Plans

If a leak does occur in an annulus of any DST, there are two documents for deployment of the DST Annulus Emergency Pumping System. One is **HNF-3484**, Double-Shell Tank Emergency Pumping Guide. The second, and most important in terms of meeting the **10** day response time, is **RPP-5842**, Time Deployment Study.

3.3 Storage Trailer

Mobile trailer **HO-64-7008** has been designated as the permanent storage facility for the emergency pumping system. Presently it is parked east of **MO-850** in 200 East. Within the trailer are the electrical and disconnect skids; submersible and air pumps, cover plates; fabricated parts and purchased components, in-process work and materials needed for additional fabrication are being stored. It is recommended that upon acceptance of this ABU Plan, Tank Farm Operations relocate this trailer closer to the DST Farms in 200 East.

3.4 Equipment and Parts

With the engineering design completed, a combination of purchased parts, completed assemblies, fabricated or partially fabricated parts, and materials needed have been located in the Storage trailer **HO-64-7008**. This will permit response to either the **AN** or **AZ** configuration. Both configurations have spare parts back-ups in the trailer. Appendix D, Parts Inventory – Trailer **HO-64-7008**, lists the parts, including completed assemblies and fabrications, and their location within the trailer. Many smaller parts are stored in a large tool chest. The raw stock is primarily sections of stainless steel piping and flat bar. Appendix E, Parts to Fabricate, lists the flanges and trunions in partial fabrication status and smaller parts that need to be fabricated out of the raw stock.

3.5 Operational and Maintenance Documentation

Engineering drawings and documentation has been completed. If a primary tank leaks into the annulus requiring an emergency response, the two (2) documents to review are the Emergency Pumping Guide and Time Deployment Study. These documents provide the directions for responding. Also available are the necessary operational and maintenance test plans and procedures, including PM/S data sheets. A list of the documents can be found in Appendix F, "Operational and Maintenance Documentation." Copies of these documents are in three ring binders, in the two-drawer file cabinet, in the storage trailer.

3.6 Training

Normal training that qualifies personnel to work within their skill level inside the tank farm will suffice. Any specific training for the tasks at hand during the emergency pumping will be handled as “On-The-Job” (OJT). If a Just-In-Time (JIT) classroom session is necessary it will be provided by the Training Department in conjunction with the Subject Matter Expert (SME).

A Project overview will be presented as part of the Operations Continuing Training Program.

4.0 ABU COMPLETION

The final ABU Completion will consist of a review of the deliverables by DST Farm Operations, including a walk-through of the storage trailer and a buy-off of the ABU check list. See Appendix B.

5.0 REFERENCES

40 **CFR** 265.193(c)(4), Containment and Detection of Releases.

HNF-IP-0842, Vol. IV, Section 3.12, Acceptance of Structures, Systems and Components for Beneficial Use

HNF-3484, Double-Shell Tank Emergency Pumping Guide

RPP-5842, Time Deployment Study for Annulus Pumping

WAC 173-303-640(4)(c)(iii), Tank Systems

APPENDIX A

IOC – DST Annulus Pump, Exemption from the Requirements of **the**
Operational Acceptance Procedures – ~~CCS000000~~-01-02

From: Operational Readiness
Phone: 373-2080
Date: June 5, 2001
Subject: DST ANNULUS PUMP

CC800000-01-02

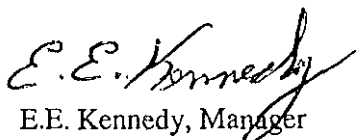
To: C. E. Shipler

Copies:	R. J. Brown	D. G. Hert	T. C. Oten
	D. O. Dobson	G. P. Hopkins	D. W. Reberger
	G. N. Hanson	E. E. Kennedy	D. Scott

- References
1. "F-IP-0842, RPP Administration, Volume XIII, Section 3.5, Revision 0a, "Operational Acceptance," CH2M HILL Hanford Group Inc., Richland, Washington
 2. HNF-3484, Revision 3, "Double Shell Tank Emergency Pumping Guide"
 3. RPP-5842, Revision 0, "Time Deployment Study for Annulus Pumping"

The Operational Acceptance procedure (Reference 1) includes an extensive checklist of documentation and readiness review affidavits required for operational acceptance. The current revision of the procedure states: "With the written concurrence of the Director, Operational Readiness, project activities having the equivalent of an Operational Acceptance checklist approved by the facility operations manager (e.g., Interim Stabilization Saltwell Pumping) can be exempted from this procedure. All future projects shall use the provisions of this procedure effective immediately".


The DST Annulus Pump project has an existing pre-approved Acceptance for Beneficial Use checklist released with the upgrade project Engineering Task Plan of Reference 2. Therefore, it is determined that the DST Annulus Pump project shall be exempt from the requirements of the Operational Acceptance procedure of reference 1, but the project shall comply with the requirements set forth in the *Acceptance of Structures, Systems, and Components for Beneficial Use* procedure, formerly HNF-IP-0842, Vol. IV, Section 3.12). A copy of the archived procedure can be obtained from the Procedures organization Manual Coordinator.


E.E. Kennedy, Manager

mdm/eob

CONCURRENCES:


R.P. Tucker, DST Facility Operations Manager


D.O. Dobson, Operational Readiness


R.W. Reed, Design Authority

APPENDIX B
ABU for **DST** Annulus Emergency Pump System – Check list

ABU for SSCs for ANNULUS EMERGENCY PUMP SYSTEM

REQUIRED DOCUMENTS CHECK LIST

Appendix B

Documentation Required for ABU	Required Item	Document Number/ Comments
Description		
Engineering:		
Engineering Test Plan	YES	HNF-3484, DST Emerg. Pumping Guide
Activity Schedule	YES	RPP-5842, Time Deployment Study
Final Safety Analysis Report	N/A	
Interim Safety Basis - Update	N/A	
Safety Assessment	YES	IRPP-6485, Technical Information (C)
Safety Equipment List	N/A	
Operational Safety Requirements (or update existing)	N/A	
Operational Safety Documents (or update existing)	N/A	
Design Criteria	YES	RPP-6485, Technical Information (I)
System Design Description	YES	RPP-5842, Time Deployment Study
Test Plan/Specifications	N/A	
Acceptance Test Procedures and Final Test Report	YES	ATP-001-001, See RPP-6638 (ATR)
Operational Test Procedures and Final Test Report	YES	OTP-001-001
Environmental Impact Statement		
Environmental Report		
Environmental Permits		
Hazardous Waste Disposal Plan/Procedures	N/A	
Solid Waste Disposal Plan/Procedures	N/A	
Stress/Seismic Analysis	YES	RPP-6485, Technical Information (TI) (H)
Stress/Design Report	YES	RPP-6485, Technical Information (TI) (H)
Design Specifications/Report	YES	RPP-6485, Technical Information (TI)
Equipment Specifications	YES	RPP-6485, Technical Information (TI)
Procurement Specifications	YES	RPP-6485, Technical Information (D)
Construction Specifications	N/A	
Essential Material Specifications	N/A	
Final Design Drawings	YES	RPP-6485, Technical Information (E)
Installation Drawings	YES	See H-14-104118, Drawing List
Installation Work Plan	YES	RPP-5842, Time Deployment Study
As-Built Drawings	N/A	
Interface Control Drawings	N/A	
IEFD Drawings	YES	H-14-104142 thru H-14-104147
Systems Drawings	N/A	
Drawing Tree	YES	See H-14-104118. Drawing List
Incorporate Outstanding Project Specific ECNs		latest drawing list
NOTE: "x" after RPP-6485 refers to specific Appendix		

ABU for SSCs for ANNULUS EMERGENCY PUMP SYSTEM REQUIRED DOCUMENTS CHECKLIST

Documentation Required for ABU	Required	Document Number/
DESCRIPTION	Item	Comments
ADP:		
Software Configuration Management Plan	N/A	
Systems Requirements Specification	N/A	
Software Design Description	N/A	
Software Validation/Verification	N/A	
Training:		
Training Plan	YES	Refer to Section 3.6 of ABU
Training Manuals	N/A	
Training to Operating Crews	YES	Refer to Section 3.6 of ABU
Training to Maintenance Crews	YES	Refer to Section 3.6 of ABU
Training Mock-Up	YES	See Videos, located in storage trailer
Operations/Maintenance:		
Operating and Maintenance Manuals	YES	See vendor information, VI No. 50121
Operating Procedures	YES	RPP-6485, Technical Information (E)
Surveillance Procedures	N/A	
Calibration Procedures	YES	6-FCD-454 and 6-PCD-509
Preventive Maintenance Procedures	YES	RPP-6485, Technical Information (E)
Repair Maintenance Procedures	N/A	
Functional Check Procedures	N/A	
PM/S Datasheets	YES	ET-0759, 60, 66, 67; ET-07461, 62, 64
Final Joint Safety Walkdown (Ops, Eng, Maint, etc.)	Open	
Quality Assurance:		
Inspection Plan	YES	Standard Operating Procedures
QAPP	N/A	
QAP,P	N/A	
Procurement:		
Vendor Information Files	YES	VI No. 50121; RPP-6485 (D)
Comprehensive Equipment List	YES	
Spare Parts List		RPP-6485, Technical Information (F)
Spare Parts in Stock	YES	
NOTE: "x" after RPP-6485 refers to specific Appendix		

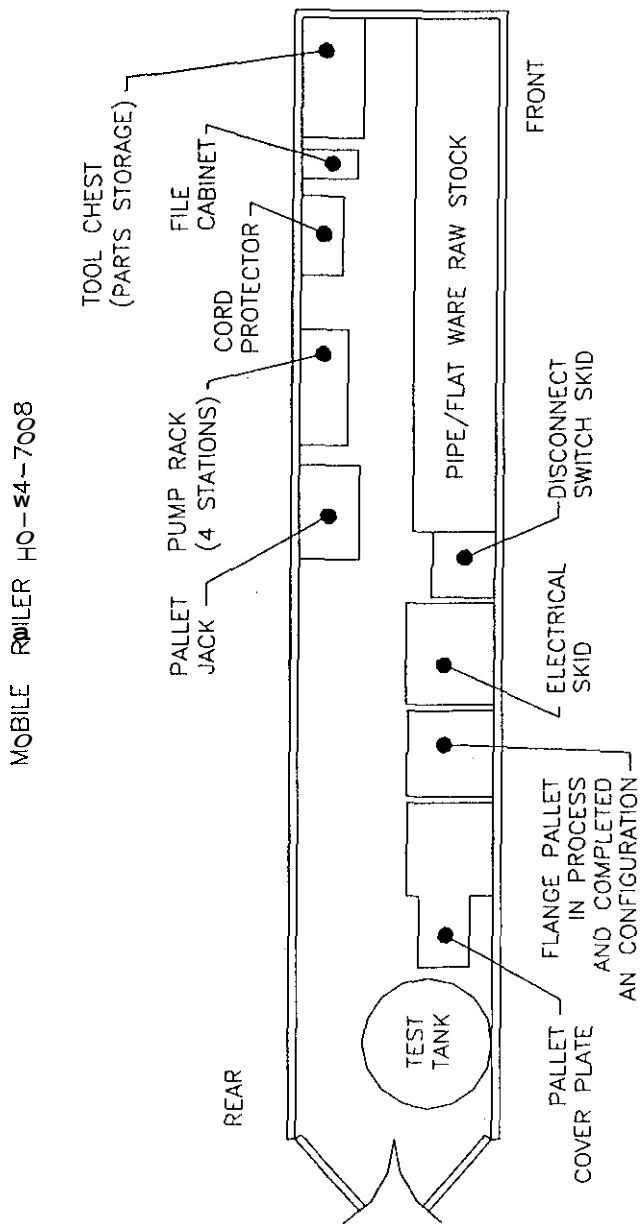
APPENDIX C

List of Drawings

LIST OF DRAWINGS	
LOCATION: HO-64-7008 Storage Trailer	
Drawing Number	Title/Description
H-104118	Drawing list & Area Map
Piping & Vessels	
H-14-103869	Test Skid Submersible Pump Arrangement, View, Detail
H-14-103870	Air Pump in Tank Test Arrangement
H-14-103871	Mock Annulus Riser and lower Pump Arrangement, Details
H-14-103872	Air Driven Pump Adapter Arrangement and Assembly
H-14-103873	Jumper Assembly Annulus Pump Pits Preliminary Fabrication
H-14-104122	Jumper Arrangement Annulus Pump Pit 214-AN
H-14-104123	Jumper Arrangement Annulus Pump Pit 214-AP
H-14-104124	Jumper Arrangement Annulus Pump Pit 214-AW
H-14-104125	Jumper Arrangement Annulus Pump Pit 214-AY
H-14-104126	Jumper Arrangement Annulus Pump Pit 214-AZ
H-14-104127	Jumper Arrangement Annulus Pump Pit 214-SY
H-14-104128	Jumper Assembly Annulus Pump Pit 214-AN
H-14-104129	Jumper Assembly Annulus Pump Pit 214-AP
H-14-104130	Jumper Assembly Annulus Pump Pit 214-AW
H-14-104131	Jumper Assembly Annulus Pump Pit 214-AY
H-14-104132	Jumper Assembly Annulus Pump Pit 214-AZ
H-14-104133	Jumper Assembly Annulus Pump Pit 214-SY
H-14-104134	Pump Assembly Annulus Pump Pit 241-AN
H-14-104135	Pump Assembly Annulus Pump Pit 241-AP
H-14-104136	Pump Assembly Annulus Pump Pit 241-AW
H-14-104137	Pump Assembly Annulus Pump Pit 241-AY
H-14-104138	Pump Assembly Annulus Pump Pit 241-AZ
H-14-104139	Pump Assembly Annulus Pump Pit 241-SY
H-14-104140	Submersible Pump Assembly Modification
H-14-104655	Cover Plate
Electrical	
H-14-104119	DST Annulus pumping Utility Wiring Diagram
H-14-104120	DST Annulus Pump System - Fused Disconnect Skid Assy
H-14-104141	DST Annulus Pump System - Fld. Rack Arrange, Schem, Assy
H-14-104142	DST Annulus Pumping Utility Arrangement 241-AN Tank Farm
H-14-104143	DST Annulus Pumping Utility Arrangement 241-AP Tank Farm
H-14-104144	DST Annulus Pumping Utility Arrangement 241-AW Tank Farm
H-14-104145	DST Annulus Pumping Utility Arrangement 241-AY Tank Farm
H-14-104146	DST Annulus Pumping Utility Arrangement 241-AZ Tank Farm
H-14-104147	DST Annulus Pumping Utility Arrangement 241-SY Tank Farm

APPENDIX D
Parts Inventory – Trailer HO-64-7008

STORAGE PLAN-DST ANNULUS EMERGENCY PUMPING SYSTEM
ASSEMBLIES. COMPONENTS & RAW STOCK



PARTS INVENTORY - DST Annulus Emergency Pumping System			
PAGE 1 of 5		LOCATION: HO-64-7008	
Part Number	QTY.	Nomenclature	System/Comments
Support Equipment			
NONE	1	Knack Job Master Tool Chest, ~ 3' X 5' X 4'	
NONE	1	Pallet jack, red	
NONE	1	Two drawer file cabinet	
NONE	1	Storage rack, submersible pumps, four positions	
Pumping System Equipment			
H-14-104140-010; -020	4	Submersible pumps (modified)	
H-14-104134-45; -46	2	Air pumps, with extension, ~6' long	
H-14-104134-25; 138-25	1	~3" DIA. pipe extension, with two flanges, ~4' long	
H-14-104134-26; 138-26	8	20' sections, 3/4" pipe	
H-14-104134-27; 138-27	6	20' sections, 2" pipe	
	6	20' sections, 3" pipe	
	6	Hussen HBLTTs Truktrac 2.25" by 2' by 3'	Power cable protectors from vehicle traffic
H-14-104120	1	Fused disconnect skid assembly	
H-14-13-104141 SHT 4	1	Field rack assembly on skid	
Pallet - In Process Flanges			
H-14-104134-35; 138-35	4	Unfinished flange plates, 7/8" by 32" DIA.	See work pkgs. 4769, 4777
H-14-104138-39	4	Trunions, AZ configuration only	See work order 4801
H-14-104138-59	2	Cap assemblies	See work order 4801
Pallet - Cover Plates			
H-14-104655	1 set	Cover plate, 2 piece set	

PARTS INVENTORY - DST Annulus Emergency Pumping System

PAGE 2 of 5

LOCATION: HO-64-7008

Part Number	Qty.	Item Description	System/Comments
		Parts in Knack Job Master Tool Chest	
		Identified by Dwg. Dash Number	
		TOP Shelf:	
H-14-104132-21	12	Nuts, heavy hex, 5/8" -11 unc-2B,	
H-14-104132-32	3	Elbows, 90 deg., 2"	
H-14-104132-32 (?)	1	Elbow, 90 deg., 2"	Material Request 42401
H-14-104132-20	12	Studs, Rocky, 5/8" by 5" long, full thread, (-11 unc-2A)	
H-14-104132-14	2	Operating screws	
H-14-104132-30	5	Flange, 6" DIA by 21/2" ID, with 4 concentric 3/4" holes	
H-14-104132-35	3	Pin, 3/16" by 2", alloy steel, Type F	
H-14-104132-15	1	Sheet, neoprene, 1/8" thick, 2 feet square (Durometer)	
		SECOND Shelf:	
H-14-104134-59	2	Completed cap assemblies (AN configuration)	
H-14-104134-33	2	Gasket, 55-75 Durometer, 1/8" by 30" OD by 13" ID	Work Package 4769
H-14-104138-33	2	Gasket, 55-75 Durometer, 1/8" by 30" OD by 13" ID	Work Package 4777
H-14-104134-21; 138-21	100	Band-It, Self Lock Ties, 304 SS, .010" by .187" by 14.875"	
-14-104134-30; 138-30	10	Couplings, 3/4" by 2"	
-14-104134-56; 138-56	20	Heavy hex nut, 5/8" 11 unc 20	
-14-104134-31; 138-31	4	Tee, threaded, 3/4"	
-14-104134-32; 138-32	3	Flange fitting, 71/2" OD by 31/2" ID, with 4 concentric 3/4" holes	

PARTS INVENTORY - DST Annulus Emergency Pumping System

PAGE 3 OF 3		LOCATION: PU-04-1000	
Part Number	QTY.	Nomenclature	System/Comments
		<u>Parts in Knack Job Master Tool Chest</u>	
		<u>Identified by Dwg. Dash Number</u>	
		<u>SECOND Shelf:</u>	
NOTE: Deleted, Both AN, AZ	3	Plug, 1", hex head	MR 00043054
H-14-104134-60; 138-60	3	Hex nipples, 3/4" NPT	
H-14-104134-54; 138-54	7	Bolt, heavy hex, 5/8" -11 X 31/4" long	
Not on Drawing	14	Coupling, pipe, threaded, 1" NPT	MR 44875, count 9; MR 44868, count 5
H-14-104134-19	8	Cable fitting, 1", Form C	
H-14-104138-19	8	Cable fitting, 1", Form C	
H-14-104134-11; 138-11	4	Union, 3/4" FPT, O ring	
		<u>BOTTOM of TOOL CHEST:</u>	
H-14-104134-34; 138-34	1 Sheet	Blueguard style 3700, ~2' by 3' by 1/8" THK	Raw stock for gaskets
H-14-104134-29; 138-29	4	Reducer, concentric, 3" by 2", Sched 80	
Not on Drawing	1	Round bar, 2 1/2" DIA by 12" long, 304 L	See P.O. 00007630
Not on Drawing	1	Round bar, 1 1/2" DIA by 12" long, 304 L	See P.O. 00007630
H-14-104134-48; 138-48	17	Rod, Actating (2B095-5)	
H-14-104134-48; 138-48	4	Rod, Actating (2B095)	
H-14-104138-16	4	Bail, lifting	Work Package 4769
H-14-104134-16	4	Bail, lifting	Work Package 4777
H-14-104134-40; 138-40	8	Plates, solid, 3/4" by 6" by 6"	CQ-0317268-1A

PARTS INVENTORY - DST Annulus Emergency Pumping System			
PAGE 4 of 5 LOCATION: HO-64-7008			
Part Number	QTY.	Nomenclature	System/Comments
		Parts in Knack Job Master Tool Chest	
		Identified by Dwg. Dash Number	
		BOTTOM of TOOL CHEST	
H-14-104132-25	1	Pipe, 1/2" by 3'	
	1	Double flange assembly	Connects pumps in tandem
H-14-104132-17	1	Valve, ball, 3 way, 2" SST T port, side entry, 90 deg. rotation	MPH-H4B-H01
H-14-104132-17	1	Valve, ball, 3 way, 2" BW, SST T port, side entry, 90 deg. rotation	MPH-H4B-H01
NOT on Drawing	1	Valve, ball, 3 way, SST, BW	MPH-H4B-H02 (PO. 76441)
Work Package 4706	1	Converter assembly, 3" (3" Inlet, 3" outlet)	(Hanford Heads)
Work Package 4706	4	Converter assemblies, 2" (2" Inlet, 2" outlet, with bail)	(Hanford Heads)
H-14-104134-15; 138-15	8	Kick plates, 1/4" by 6" by 6" with 2 1/2" center holes	H-2-30600
H-14-104134-14; 138-14	10	Nozzle, male, 2" (4 1/4" by 3 1/4" OD)	H-2-90185-2
H-14-104134-18; 138-18	2 qt	3M Fast Bond #10 adhesive (see note)	
		NOTE: Expiration date of 08/01 - Due to Adhesive time sensitivity	
		Purchase at time of emergency	

PARTS INVENTORY - DST Annulus Emergency Pumping System			
PAGE 5 of 5		LOCATION: HO-64-7008	
Part Number	QTY.	Nomenclature	System/Comments
		Miscellaneous Raw Stock	
	1	Bar stock, solid, ~5" DIA by 24" long	
	1	Pipe, 2", over 20' long	
	1	Pipe, 2", under 20' long	
	1	Pipe, 3", ~ 20' long	
	1	Channel, box, ~2" by 2" by 20'	
	3	Flat metal stock, ~ 1/2" by 4" by 15'	
	1	Flat metal stock, ~1" by 4" by 15'	
	1	Flat metal stock, ~1/4" by 2" by 15'	
	2	Flat metal stock, ~1/2" by 1" by 15'	
	1	Flat metal stock, ~1/4" by 3" by 15'	
	1	Flat metal stock, ~1/4" by 4' by 12'	
	3	Round metal stock, ~1/2" DIA by 13'	
	1	Round metal stock, ~1/4" DIA by 13'	

APPENDIX E

Parts to Fabricate

PARTS Remaining to be Fabricated - DST Annulus Emergency Pumping System			
For Flange Assemblies		LOCATION: TRAILER (Raw stock)	
Part Number	QTY	Nomenclature	System/Comments
Started, but not completed			
H-14-140134-35; 138-35	4	Plate 7/8" THK X 32" OD	See work orders 4769 & 4777, two flange plates, each configuration (AN & AZ), in various stages of drilling completion.
H-14-104138-39	4	Trunions, AZ configuration only	See work order 4801
H-14-104138-59	2	Caps, AZ configuration (same as AN)	See work order 4801
Fab from raw stock		Note: H-14-140134 is AN; H-14-140138 is for AZ configuration.	See AN work order 4777, AZ work order 4769
H-14-104134-28; 138-28	AR	Pipe 2" sched 40	See raw stock, Parts Inventory, Page 5
H-14-104134-34; 138-34	4	Gasket 3" CL 150 RFX 1/8" THK Blueguard	See raw stock, Parts Inventory, Page 3
H-14-104134-36; 138-36	4	Plate 3/4" THK 2 1/2" OD X 1 1/16" ID	See raw stock, Parts Inventory, Page 5
H-14-104134-37; 138-37	4	Plate 3/4" THK X 4" X 12 1/2"	See raw stock, Parts Inventory, Page 5
H-14-104134-38; 138-38	16	Plate 1/4" THK	See raw stock, Parts Inventory, Page 5
H-14-104134-41; 138-41	16	Plate 1/2" THK	See raw stock, Parts Inventory, Page 5
H-14-104134-42; 138-42	26	Plate 3/4" THK (Spacer)	See raw stock, Parts Inventory, Page 5
H-14-104134-43; 138-43	AR	Sheet 11 gauge X 3/4" X L AR	Order raw stock? None, Parts Inventory, Page 5
H-14-104138-57	2	Plate 3/16" THK X 1 1/2" DIA (For trunion, AZ configuration only)	See raw stock, Parts Inventory, Page 5
		NO OTHERS FOR FLANGE ASSEMBLIES	

Note: Parts quantities are per drawing

PARTS Remaining to be Fabricated - DST Annulus Emergency Pumping System

For Jumper Assemblies		LOCATION: TRAILER (Raw stock)	
Part Number	QTY	Nomenclature	System/Comments
H-14-140132-7	1	Indicator, 3/8" THK	
H-14-140132-8	1	Orifice plate	
H-14-140132-9	1	Orifice plate	
H-14-104132-10	2	Connector, 2", horizontal	H-2-32420-1
H-14-104132-11	4	Connector, 2", vertical	H-2-32420-2
H-14-104132-12	2	Lifting bail, 14'	H-2-90161-16
H-14-104132-13	6	Gasket, conn, 2", Type III	H-2-3997-6
H-14-104132-16	1	Bracket, 3/4" THK	
H-14-104132-19	6	Round bar, 3/8" DIA by L AR	
H-14-104132-22	1	Plate, 3/8" THK	
H-14-104132-23	2	Plate, 4 1/2" by 1/2" by 1/2' THK	
H-14-104132-24	AR	TS 2 1/2" by 2 1/2" by .180 wall	
H-14-104132-27	1	Bar, 4 1/2" by 1/2" by 4 1/2" L	
H-14-104132-28	2	Bar, 1 1/4" by 1/4" by 3' L	
H-14-104132-29	2	Bar, 4" by 1/4' by L AR	
H-14-104132-34	2	Bar, # 1/2" by 3/4" by 5 1/4" L	
H-14-104132-36	2	Bar 3/4' by 3/8" by 2 1/2" L	
H-14-104132-37	AR	Pipe, 1", sched 40S	
H-14-104132-38	1	Plate, 1/4" THK by 2' DIA.	
		H-14-104132- is for AZ Jumper Assembly Configuration	

Note: Parts quantities are per drawing

E-2

APPENDIX F

Operational and Maintenance Documentation

DOCUMENT INVENTORY - DST Annulus Emergency Pumping System

Page 1 of 3			LOCATION: HO-64-7008 File Cabinet	
Document Number	Title/Description		System/Comments	
WORK PACKAGE				
2E-00-01667 W	Remove DST Annulus Pump			
2H-00-04667 F	Modify 4 submersible pumps per H-14-104140			
2H-00-04706 F	Assy/Fab connectors for N-2 32420/30, assemble			
	horizontal and vertical connector 2" & 3"			
	Folding bail & horizontal connecting bail			
2H-00-04768 F	Fab Jumper - AZ Farm		Parts order only - Listed in RPP-6485 fab of jumper	
2H-00-04769 F	Fab 2 pump mounting flanges & piping for H-14-104138		Work packages closed incomplete, record purposes only	
	244 17 0015 025			
2H-00-04777 F	Fab 2 pump mounting flanges per H-14-104137		Work packages closed incomplete, record purposes only	
	244 18 0010 070			
2H-00-04801 F	Items # 39 (cap) and # 59 (trunion)		Work packages closed incomplete, record purposes only	
2H-01-05281 F	Fab flanges per drawings and J-10		Work packages closed incomplete, record purposes only	
2H-01-05326 F	Fab 2 flex jumpers per H-2-92058		Work packages closed incomplete, record purposes only	
2E-00-00955 F	Fab DST Annulus Pumping Skid			
2E-00963 F	Fab Test Skid for Submersible Pump			
BOOK ONE		<u>Operating Directions & Notice of Correction Completion</u>		
HNF-3484	DST Emergency Pumping Guide			
HNF-5842	Time Deployment Study			
CHG-0003372R2	Wrk Rq'd for Cntrt Completion of Ecology SY TF NOC		SY Tank Farm Notice of Correction	

DOCUMENT INVENTORY - DST Annulus Emergency Pumping System

Page 2 of 3 LOCATION: HO-64-7008 File Cabinet

Document Number	Title/Description	System/Comments
BOOK TWO		
OTP-001-001	Operational/Maintenance Testing and Procedures	
	Operational Test Procedure for DST Annulus	
	Emergency Pumping Equipment	
T0-001-281 A-O	Emergency Annulus Pumping Procedure for AN Farm	
T0-001-282 A-O	Emergency Annulus Pumping Procedure for AP Farm	
T0-001-283 A-O	Emergency Annulus Pumping Procedure for AW Farm	
T0-001-284 A-O	Emergency Annulus Pumping Procedure for SY Farm	
T0-001-288 A-O	Emergency Annulus Pumping Procedure for AY Farm	
T0-001-289 A-O	Emergency Annulus Pumping Procedure for AZ Farm	
BOOK THREE		
	Technical Data	
RPP-6485	Technical Information to support DST Annulus	
RPP-6638	DST Annulus Acceptance Test Report	Includes completed ATP-001-001
4412.086-CHC-001	DST Annulus Pump Cover Design Document for	
	Review and Comments	
H-14-104118	Drawing List and Area Map	
BOOK FOUR		
	PM/S Data Sheets & Calibration Procedures	
PM/S ET-07459	Rotate Annulus Pump	
PM/S ET-07460	Rotate Annulus Pump	
PM/S ET-07461	Pressure, Indicator, Pump Stand Calibration-101	

DOCUMENT INVENTORY - DST Annulus Emergency Pumping System

Page 3 of 3

LOCATION: HO-64-7008 File Cabinet

Document Number	Title/Description	System/Comments
BOOK FOUR (con't)	PM/S Data Sheets & Calibration Procedures	
PM/S ET-07462	Flow, Indicator, Heel Pump Test Stand Calibration	
PM/S ET-07464	Pressure, Indicator, Pump Stand Calibration -101	
PM/S ET-07466	Rotate Annulus Pump	
PM/S ET-07467	Rotate Annulus Pump	
6-FCD-454, A5	Yokogawa Flow Converter Calibration	
6-PCD-509, B.0	Pressure and Vacuum Gauges Calibration	
BOOK FIVE	Vendor Information	
VI No.50121	Vendor Information	
FILE FOLDER	Miscellaneous Documents	
ANN Pump 002	Site Fabrication Services (SFS) Fabrication Request:	
	Fab (2) annulus pump mounting flanges for H-14-104138	
ANN-003	Site Fabrication Services (SFS) Fabrication Request:	
	Fab (2) annulus pump mounting flanges for H-14-104134	
ANN-003	Site Fabrication Services (SFS) Fabrication Request:	
	Fab (2) annulus pump mounting flanges for H-14-104134	
No Number	Document Package for 2H0004768 F	
No Number	Document Package for 2H0004769 F & 2H0004777	
No Number	DST Annulus Pumping Project Wkly Procedure Status	