S

ENGINEERING CHANGE NOTICE

Page 1 of 4

1. ECN 651956

Proj.
ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	4. USQ Required?	5. Date
Supplemental ☒	GW Wilson, S7-12, 373-1340	☒ Yes ☐ No	7/23/1999
Direct Revision ☒	6. Project Title/No./Work Order No.	7. Bldg./Sys./Fac. No.	8. Approval Designator
Change ECN ☐	Characterization Project / CACN 102248	200 G	N/A
Temporary ☐	9. Document Numbers Changed by this ECN (includes sheet no. and rev.)	10. Related ECN No(s).	11. Related PO No.
Standby ☐	HNF-2305, Rev 0	N/A	N/A
Supersedeure ☐			
Cancel/Void ☐			

12a. Modification Work	12b. Work Package No.	12c. Modification Work Complete	12d. Restored to Original Condition (Temp. or Standby ECN only)
☐ Yes (fill out Blk. 12b)	N/A	N/A	N/A
☒ No (NA Blks. 12b, 12c, 12d)		Design Authority/Cog. Engineer Signature & Date	Design Authority/Cog. Engineer Signature & Date

13a. Description of Change

13b. Design Baseline Document? ☐ Yes ☒ No

ETN-98-0001

DRAWING EVALUATION REPORT FOR SAMPLING EQUIPMENT

This ECN updates the drawing evaluation report to reflect drawing status changes and procedure changes. See attached pages for details.

14a. Justification (mark one)

Criteria Change ☒	Design Improvement ☐	Environmental ☐	Facility Deactivation ☐
As-Found ☐	Facilitate Const ☐	Const. Error/Omission ☐	Design Error/Omission ☐

14b. Justification Details

- * A yearly update of the evaluation report is required to ensure procedure compliance.
- * This ECN is covered by USQ TF-96-690, Rev. 2
- * Design verification performed by informal review per HNF-IP-0842, VOL IV, SEC. 4.24
- * This modification will not change collective dose since it has no impact on radiological sources, contamination control, or shielding.
- * The changes implemented by this ECN do not modify any sampling equipment. Therefore, a NEPA screening is not required per section 2.1 of HNF-PRO-452.

15. Distribution (include name, MSIN, and no. of copies)

M.E. Beaver	S7-12	1 COPY	E. E. Salinas	S7-12	1 COPY
R. M. Boger	S7-12	1 COPY	J. L. Smalley	S7-12	1 COPY
R. N. Dale	S7-12	1 COPY	G. W. Wilson	S7-12	1 COPY
G. P. Janicek	S7-12	1 COPY			

RELEASE STAMP

DATE:	HANFORD RELEASE	ID:
STA: 4		2
SEP 09 1999		

ENGINEERING CHANGE NOTICE

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1. ECN (use no. from pg. 1)

651956

16. Design Verification Required

☒ Yes

☐ No

17. Cost Impact

ENGINEERING

CONSTRUCTION

Additional [N/A] \$

Savings ☐ \$

Additional [N/A] \$

Savings ☐ \$

18. Schedule Impact (days)

Improvement [N/A]

Delay ☐

19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.

SDD/DD	☐	Seismic/Stress Analysis	☐	Tank Calibration Manual	☐
Functional Design Criteria	☐	Stress/Design Report	☐	Health Physics Procedure	☐
Operating Specification	☐	Interface Control Drawing	☐	Spares Multiple Unit Listing	☐
Criticality Specification	☐	Calibration Procedure	☐	Test Procedures/Specification	☐
Conceptual Design Report	☐	Installation Procedure	☐	Component Index	☐
Equipment Spec.	☐	Maintenance Procedure	☐	ASME Coded Item	☐
Const. Spec.	☐	Engineering Procedure	☐	Human Factor Consideration	☐
Procurement Spec.	☐	Operating Instruction	☐	Computer Software	☐
Vendor Information	☐	Operating Procedure	☐	Electric Circuit Schedule	☐
OM Manual	☐	Operational Safety Requirement	☐	ICRS Procedure	☐
FSAR/SAR	☐	IEFD Drawing	☐	Process Control Manual/Plan	☐
Safety Equipment List	☐	Cell Arrangement Drawing	☐	Process Flow Chart	☐
Radiation Work Permit	☐	Essential Material Specification	☐	Purchase Requisition	☐
Environmental Impact Statement	☐	Fac. Proc. Samp. Schedule	☐	Tickler File	☐
Environmental Report	☐	Inspection Plan	☐		☐
Environmental Permit	☐	Inventory Adjustment Request	☐	None	☒

20. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision

N/A

Document Number/Revision

N/A

Document Number/Revision

N/A

21. Approvals

Signature

Date

Signature

Date

Design Authority G.P. Janicek

Cog. Eng. T. Farris

Cog. Mgr. J.S. Schofield

QA

Safety

Environ.

Other

Informal Rev. HF Shumake Jr.

Proj. Mgr. J.L. Smalley

This ECN does not modify and design requirements or safety class equipment associated with Characterization equipment. The only criteria change is associated with the procedures that are referenced in this document.

Design Agent

PE

QA

Safety

Design

Environ.

Other

DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

ADDITIONAL

ENGINEERING CHANGE NOTICE CONTINUATION SHEET

Page 3 of 4

ECN: 651956

Date: 7/23/99

HNF-2305: Change the document as outlined below;

Section 1.0

- Revised paragraph to reflect that this is an update to the evaluation.
- Revised paragraph to change from TWRS to River Protection Project

Section 2.0

- Revised to indicate that this is an update of the drawings evaluation
- Added Light Duty Utility Arm (LDUA) drawings
- Changed old task order to current contract number

Section 3.0

- Revised reference for Engineering Drawing to current procedure
- Revised to change from TWRS to RPP

Section 4.0

- Added section for LDUA

Section 4.1

- Corrected category for H-2-38075 from S to G
- Deleted drawings H-2-90257, H-2-91722, H-2-91723, H-2-91724, and H-2-91725 which are outdated drawings that were cancelled.
- Changed summary, sec. 4.1.1., to reflect noted changes

Section 4.2

- Updated number of sheets for H-2-91707 from 2 to 3
- Updated summary, sec. 4.2.1., to reflect noted changes

Section 4.3

- Changed all drawings that previously were categorized as S or E to category G
- Updated number of sheets for H-2-89462 from 1 to 3
- Updated summary, sec. 4.3.1., to reflect noted changes

Section 4.4

- Corrected number of sheets for H-2-827188 from 7 to 9, H-2-827192 from 1 to 2, and H-2-827193 from 1 to 2
- Updated summary, sec. 4.4.1., to reflect noted changes

Section 4.5

- Added drawings H-2-75053, H-2-85349, H-2-85349, H-2-99346, H-2-690126, and H-2-690144.
- Updated number of sheets for H-2-38078 from 1 to 2, H-2-85299 from 1 to 7, H-2-85341 from 1 to 2, and H-2-690124 from 2 to 4.

ENGINEERING CHANGE NOTICE CONTINUATION SHEET

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ECN: 651956

Date: 7/23/99

- Changed category for H-9-174 from E to G
- Added H-2-85299, sheets 8, 9, & 10 as category E
- Deleted drawings H-2-91679, H-2-91680, and H-2-99316
- Updated Summary, sec. 4.5.1., to reflect noted changes

Section 4.6

- Deleted drawings H-14-0030122, H-14-100739, H-14-100741, H-2-821455, and H-2-821456
- Updated number of drawing sheet for H-2-829082 from 2 to 6, H-829108 from 4 to 5, H-2-829121 from 2 to 6, and H-2-827137 from 4 to 5
- Added drawing H-2-829109 and H-2-829138
- Updated Summary, sec. 4.6.1., to reflect noted changes

Section 4.7

- Changed category for all auger sampling drawings (H-2-79960 & H-2-826321) from S to G
- Updated Summary, sec. 4.7.1., to reflect noted changes

Section 4.8

- Added entire section and summary for LDUA drawings (see document for details)

Section 5.0

- Updated table 5.1 to reflect changes in total number of drawings
- Revised summary to note that Truck 3 & 4, exhausters, and support drawings comply with drawing categories noted in this document and that Truck 1 does not comply.

S

HNF-2305, Rev 1

DRAWING EVALUATION REPORT FOR SAMPLING EQUIPMENT DRAWINGS

R. M. Boger

Lockheed Martin Hanford Corporation

Richland, WA 99352

U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 651956

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Total Pages: 46

Key Words: Sampling, Drawing Evaluation, Category, RMCST

Abstract: This report documents the results of an evaluation of Characterization sampling equipment drawings for compliance with existing procedures on establishing drawing categories.

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Richland WA 99352, Phone (509) 372-2420; Fax (509) 376-4989.

L. Jof

Release Approval

9-9-99

Date

Release Stamp

Approved for Public Release

[illegible]

HNF-2305

Rev. 1

**DRAWING EVALUATION REPORT
FOR SAMPLING EQUIPMENT**

**Prepared For
River Protection Project
Characterization Project
Lockheed Martin Hanford Corporation**

**Prepared by
G. W. Wilson
COGEMA ENGINEERING CORPORATION**

June 1999

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1.0 INTRODUCTION

This document presents the results of a task to update the evaluation of River Protection Project (RPP) sampling equipment drawings and updates the assigned drawings category as either essential, support, or general drawings. This report updates the drawing evaluation that was originally done per Engineering Task Plan For Truck 3 & 4 Drawing Compliance and Evaluation (Wilson, 1997).

2.0 SCOPE

The scope of this report is limited to updating the evaluation and identification of drawing category for drawings of certain tank waste sampling equipment for which the RPP Characterization Project has been assigned custody, including: vapor sampling, grab sampling, auger sampling, all core sampling equipment, and Light Duty Utility Arm (LDUA) (see LMHC contract #519, release 10). This report does not address drawings for other waste tank deployed equipment systems having similar assigned custody, such as, Cone Penetrometer system, or Long Length Contaminated Equipment (LLCE). The Cone Penetrometer system, which is depicted on vendor drawings, (not H- series), is not currently turned over to operations for deployment. The LLCE equipment was just recently assigned to Characterization Project and was not included in the original scope for this update and will be addressed in the evaluation update scheduled for later in fiscal year 1999, when equipment ownership is determined.

3.0 APPLICATION

Engineering Drawings (HNF 1999a) defines the drawing categories as follows.

- a. Essential - Drawings necessary to directly support the safe operation or maintenance of the facility.
- b. Support - Drawings that further describe the design details of structures, systems, or components shown on essential drawings or are frequently used by the support staff.

- c. General - Drawings that are historical in nature or not frequently used in the operation or maintenance of the facility.

All RPP sampling equipment is mobile equipment that is not directly associated with any one facility. Therefore, this application implemented the requirements of Engineering Drawings (HNF 1999a) tempered by the fact that this equipment is not a permanent on-line facility.

The drawings that are identified as essential were selected by the following criteria:

- * Drawings that describe equipment required for safe operations (drill string arrangements)
- * Drawings that depict flow diagrams (hydraulic, pneumatic, and P&ID diagrams)
- * Drawings that depict electrical connections (elementary and one-line diagrams)
- * Drawings that depict electrical power connection (one-line and connection diagrams)

4.0 DRAWING CLASSIFICATION

The following sections are a detailed listing of the drawings that were evaluated and assigned drawing category. The listings shows the drawing category assigned in the "Cat." column with an E for drawings that are determined to be essential drawings, an S for support drawing, and a G for general drawings. For specific information about equipment drawings, refer to the specified section of this document.

Core Sample Truck 1 Drawings	See Section 4.1
Core Sample Truck 1 and 2 Drawings	See Section 4.2
Core Sample Truck 2 Drawings	See Section 4.3
RMCSST Truck 3 and 4 Drawings	See Section 4.4
Core Sampling Support Equipment Drawings	See Section 4.5
RMCSST Exhauster Drawings	See Section 4.6
Other Sampling Equipment Drawings	See Section 4.7
Light Duty Utility Arm	See Section 4.8

4.1 CORE SAMPLE TRUCK 1 DRAWINGS**Table 4.1 Core Sample Truck 1 Drawings**

Dwg. No.	Sht.	Description	Cat.	Justification/Notes
H-2-38075	1-5	Shielded Receiver Assembly	G	Not installed or used
H-2-81790	1	Hydrostatic Head Addition System Flow Diagram	G	Installed, not used
H-2-81832	1-2	Drill Rig Junction Box Enclosure Assembly	G	
H-2-81833	1-2	Hydraulic Bottom Detector Alarm Panel Assembly	S	
H-2-91390	1-2	Grapple Hoist Installation	S	Note: Important for Maintenance
H-2-91391	1-5	Grapple Hoist Assembly	S	Note: Important for Maintenance
H-2-91392	1-5	Grapple Hoist Box Assembly	S	Note: Important for Maintenance
H-2-91393	1	Grapple Hoist Box Housing Assembly	G	
H-2-91394	1	Encoder Panel Assembly	G	
H-2-91395	1	Core Sampler Truck Details	G	Not Used
H-2-91397	1-4	Pressure Readout Display Cabinet	G	
H-2-91477	1	Shielded Receiver Assembly	G	Not Used
H-2-91583	1	Quill Rod Stop Truck 1	G	
H-2-91650	1	Core Sampler Truck 1 Drawing Index	S	
H-2-91651	1-3	Shielded Receiver Assembly	G	
H-2-91652	1	Shielded Receiver Weather Cover Assembly	G	

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Table 4.1 Core Sample Truck 1 Drawings

Dwg. No.	Sht.	Description	Cat.	Justification/Notes
H-2-91653	1-3	Sampler Hoist Assembly	S	Note: Important for Maintenance
H-2-91654	1-2	Sampler Hoist Housing Assembly	G	
H-2-91655	1-2	Sampler Hoist Load Stand Assembly	G	
H-2-91656	1	Sampler Hoist Cable Wiper Assembly	G	
H-2-91657	1	Sampler Hoist Cable Drum Assembly	G	
H-2-91658	1	Sampler Hoist Cable Feed Assembly	G	
H-2-91659	1	Sampler Hoist Cover Assembly	G	
H-2-91660	1	Shielded Receiver Mount Assembly	G	
H-2-91661	1	Sampler Hoist Cable Guide Assembly	G	
H-2-91663	1-3	Shielded Receiver Base Assembly	G	
H-2-91664	1	Shielded Receiver Tube Section Assembly	G	
H-2-91686	1-2	Grapple Hoist Rotary Valve Actuator	S	Note: Important for Maintenance
H-2-91688	1	Quill Rod Adapter Truck 1	G	Not used
H-2-91701	1-7	Truck Assembly Core Sampler Truck #1	S	Note: Important for Maintenance
H-2-91701	8	Truck Assembly Core Sampler Truck #1	E	-Depicts Equipment Essential to Safe Operation (Z-Purge Diagram)

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Table 4.1 Core Sample Truck 1 Drawings

Dwg. No.	Sht.	Description	Cat.	Justification/Notes
H-2-91701	9-10	Truck Assembly Core Sampler Truck #1	S	Note: Important for Maintenance
H-2-91714	1-2	Drill Head Service Platform #1 Assembly	G	
H-2-91719	1-3	Hydraulic Installation	S	Note: Important for Maintenance
H-2-91720	1-3	Core Sampler Truck #1 Hydraulic Flow Diagram	E	-Depicts High-Pressure Process Diagram
H-2-91721	1-3	Drillhead Hydraulic Piping Install	S	Note: Important for Maintenance
H-2-92264	1	Control and Power Cable Assembly	G	
H-2-92315	1	Hydraulic and Sampler Actuator Control Panel	G	
H-2-92420	1-3	Electrical Installation	S	Note: Important for Maintenance
H-2-92421	1-4	Control Console Assembly	S	Note: Important for Maintenance
H-2-92422	1-6	Core Sample Truck #1 Connection Diagram	E	-Depicts Equipment Essential to Safe Operation, -Depicts Isolation Boundary for Electrical or High-Pressure Fluid Systems
H-2-92432	1-2	Shield Receiver Electrical Installation	S	Note: Important for Maintenance
H-2-92433	1	Panel Assembly - Circuit Breaker	G	
H-2-92434	1	Panel Detail -Circuit Breaker	G	

Table 4.1 Core Sample Truck 1 Drawings

Dwg. No.	Sht.	Description	Cat.	Justification/Notes
H-2-99726	1-2	Shielded Receiver Tube Replacement	G	
H-2-827186	1-3	Electrical Truck 1 Connection Diagram	E	-Depicts Electrical Power Diagrams
H-2-827190	1	Electrical Truck 1 One-Line Diagram	E	-Depicts Electrical one-line

4.1.1 Summary for Truck 1 Drawings**Table 4.1.1 Summary for Truck 1 Drawings**

Category	Drawings	Sheets
General Drawings	28	40
Support Drawings.	13*	44
Essential Drawings.	5	14

*Note: Drawing H-2-91701 which has both Support and Essential drawings sheets is included in the Essential drawing total.

4.2 CORE SAMPLE TRUCK 1 and 2 DRAWINGS**Table 4.2 Core Sample Truck 1 & 2 Drawings**

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-91428	1-2	Shielded Receiver View Port Assembly	G	
H-2-91665	1-3	Remote Latch Unit Assembly	G	
H-2-91666	1	3" Ball Valve Modification Assembly	G	
H-2-91667	1	Dust Cap and Sleeve Assembly	G	
H-2-91668	1	Remote Latch Unit Weight Assembly	G	Not Used
H-2-91669	1	Sampler Hoist Interlock Assembly	G	
H-2-91702	1-3	Core Sampler Truck Bed Assembly	G	
H-2-91703	1	Lower Frame & Rotation Stop Assembly	G	
H-2-91704	1	Lower Frame Assembly	G	
H-2-91705	1	Lower Bearing Mount Assembly	G	
H-2-91706	1-2	Stationary Platform Assembly	G	
H-2-91707	1-3	Rotating Platform Assembly	S	Note: Important for Maintenance
H-2-91708	1-2	Rotating Platform Weldment Assembly	G	
H-2-91709	1	Bearing Plate Detail	G	
H-2-91710	1-5	Rotating & Stationary Platform Safety Rails Assembly	G	
H-2-91711	1-2	Switch Mounts, Stops & Brackets Assembly & Details	G	

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Table 4.2 Core Sample Truck 1 & 2 Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-91712	1	Slide Rail Details	G	
H-2-91713	1	Control Console Support Frame	G	
H-2-91715	1	Shielded Receiver Lifting Frame Installation	G	
H-2-91716	1-4	Shielded Receiver Lifting Frame Assembly	G	
H-2-91717	1	Air Compressor Frame Assembly	G	
H-2-91718	1-2	Rear Jack Assembly	G	
H-2-92423	1	Motor Control Chassis Assembly	G	
H-2-92424	1-2	Panel and Control Chassis Assembly	G	
H-2-92427	1	Latching Control Chassis Assembly	G	
H-2-92428	1-2	Latching Control Chassis Details	G	
H-2-92429	1	Latch Control Panel Assembly	G	
H-2-92430	1	Latch Control Circuit Board Details	G	
H-2-92431	1	Latch Control Logic Diagram	S	
H-2-92435	1	Vent Panel Assembly	G	

4.2.1 Summary for Truck 1 & 2 Drawings**Table 4.2.1 Summary for Truck 1 & 2 Drawings**

Category	Drawings	Sheets
General Drawings	28	46
Support Drawings.	2	4
Essential Drawings.	0	0

4.3 CORE SAMPLE TRUCK 2 DRAWINGS**Table 4.3 Core Sample Truck 2 Drawings**

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-131570	1	Sampler Hoist Cable Drum Assembly	G	On Standby
H-2-140300	1-3	Core Sampler Truck 2 Assembly	G	On Standby
H-2-140301	1-2	Drawing Index Core Sampler Truck 2	G	On Standby
H-2-140302	1-6	Drill Rig Equipment Installation	G	On Standby
H-2-140303	1-6	Electrical Installation	G	On Standby
H-2-140304	1-2	Drill Rig Junction Box Enclosure Assembly	G	On Standby
H-2-140305	1-2	Hydraulic Bottom Detector Alarm Panel Assembly & Details	G	On Standby
H-2-140306	1	Up Limit Switch Proximity Probe	G	On Standby
H-2-140307	1-2	Aux Air Supply Installation	G	On Standby
H-2-140308	1-3	Truck Frame Assembly	G	On Standby
H-2-140309	1-2	Center Outrigger Jack Assembly	G	On Standby

Table 4.3 Core Sample Truck 2 Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-81785	1-17	Core Sample Truck #2 Electrical Connection Diagram	G	On Standby
H-2-81834	1-5	Grapple Hoist Installation	G	On Standby
H-2-81835	1-2	Grapple Hoist Mounting Support Assembly	G	On Standby
H-2-81836	1-6	Grapple Hoist Assembly	G	On Standby
H-2-81837	1-2	Grapple Hoist Housing Assembly	G	On Standby
H-2-81838	1-4	Purge Gas Enclosure Assembly	G	On Standby
H-2-81839	1-5	Purge Gas Piping Assembly	G	On Standby
H-2-81840	1-3	Control Console Assembly	G	On Standby
H-2-81841	1-6	Purge Gas Piping and Hose Installation	G	On Standby
H-2-81844	1-3	Quill Rod Assembly	G	Not used
H-2-81845	1-2	Kamlock Adapter Assembly	G	On Standby
H-2-81846	1-3	Hydraulic Reservoir Assembly	G	On Standby
H-2-81848	1-2	Grapple Hoist Rotary Valve Actuator Assembly	G	On Standby
H-2-81849	1	Remote Latch Unit Weight Assy	G	On Standby
H-2-81850	1-8	Hydraulic Controls Installation	G	On Standby
H-2-81851	1	Cable Connection Diagram	G	On Standby
H-2-81852	1	Overall Electrical Power Distribution Diagram	G	Duplicates information on H-2-827187 On Standby
H-2-81854	1	Loadcell Readout Assembly	G	On Standby
H-2-81855	1-2	Front Jack Assembly	G	On Standby

Table 4.3 Core Sample Truck 2 Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-82102	1-3	Line Conditioner & Control Select Panel Assembly	G	On Standby
H-2-82103	1	Line Conditioner & Control Select Panel Installation	G	On Standby
H-2-821454	1-4	Breathing Air Piping Installation	G	Note: Installed but not used On Standby
H-2-83111	1-7	Core Sampler Truck #2 Elementary Diagrams	G	On Standby
H-2-83112	1-6	Instrument Enclosure Assembly	G	On Standby
H-2-83115	1-4	Purge Gas Assembly	G	On Standby
H-2-83307	1-5	Sampler Hoist Assembly	G	On Standby
H-2-83308	1-3	Sampler Hoist Housing Assembly	G	On Standby
H-2-83309	1-2	Shielded Receiver Base Assembly	G	On Standby
H-2-83310	1-2	Sampler Hoist Load Stand	G	On Standby
H-2-83314	1-4	Shielded Receiver Assembly	G	In Standby
H-2-83315	1-2	Shielded Receiver Electrical Assembly	G	On Standby
H-2-83316	1-3	Shielded Receiver Weather Cover Assembly	G	On Standby
H-2-83891	1-3	Hydraulic Flow Diagram	G	-Depicts Process Diagrams On Standby
H-2-85068	1-2	Purge Gas Pneumatic Diagram	G	-Depicts High Pressure Process & Instrumentation Diagram On Standby
H-2-89435	1-4	Drillhead Service Platform Installation	G	On Standby

Table 4.3 Core Sample Truck 2 Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-89436	1-3	Drillhead Service Platform Assembly	G	On Standby
H-2-89437	1-2	Rpm Sensing Ring Installation	G	On Standby
H-2-89438	1-4	Penetration Rate Assembly	G	On Standby
H-2-89439	1-5	Drillhead Service Platform Assembly	G	On Standby
H-2-89440	1-2	Pressure Indicator Light Assembly	G	On Standby
H-2-89441	1	Circuit Breaker Panel Detail	G	On Standby
H-2-89442	1-3	Drillhead Hydraulic Installation	G	On Standby
H-2-89443	1-5	Inner/Outer Bellows Assembly	G	On Standby
H-2-89444	1	Cable Wiper Assembly	G	On Standby
H-2-89459	1-13	Alarm & Control Diagram	G	-Depicts Equipment Essential to Safe Operation -Depicts & Identifies Instrumentation Required by AB On Standby
H-2-89462	1-3	Purge Gas Connection Box	G	On Standby
H-2-89463	1-2	Purge Gas Cable Assembly	G	On Standby
H-2-827187	1-8	Electrical Truck 2 Connection Diagram	G	- Depicts Electrical Power Diagram On Standby
H-2-827191	1	Electrical Truck 2 One Line Diagram	G	-Depicts Electrical One-line Diagram On Standby

4.3.1 Summary of Core Sample Truck 2**Table 4.3.1 Summary for Truck 2 Drawings**

Category	Drawings	Sheets
General Drawings	60	212
Support Drawings.	0	0
Essential Drawings.	0	0

4.4 CORE SAMPLE TRUCK 3 & 4 DRAWINGS**Table 4.4 RMCST 3 & 4 Drawings**

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-690000	1-2	RMCST Truck 3 & 4 Assembly	S	
H-2-690001	1-2	RMCST Truck 3 & 4 Drawing Index	S	Note: Important for Maintenance
H-2-690005	1-5	Drill Rig Equipment Installation	G	
H-2-690006	1-3	Hydraulic Reservoir Assembly	G	
H-2-690007	1-2	Pressure Indicator Light Assembly	G	
H-2-690008	1-3	Hydraulic Flow Diagram	E	-Depicts Process Diagrams
H-2-690009	1-2	Purge Gas Pneumatic Diagram	E	-Depicts High Pressure Process & Instrumentation Diagram
H-2-690010	1-3	Truck Frame Assembly	G	
H-2-690011	1-2	Center Outrigger Jack Assembly	G	
H-2-690012	1-6	Purge Gas Piping & Hose Installation	S	Note: Important for Maintenance
H-2-690013	1-2	Auxiliary Air Supply Installation	G	

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Table 4.4 RMCST 3 & 4 Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-690014	1-3	Drill Head Hydraulic Piping Installation	S	Note: Important for Maintenance
H-2-690015	1-8	Hydraulic Controls Installation	S	Note: Important for Maintenance
H-2-690016	1-3	Intercom System Installation	G	
H-2-690017	1-2	Rear Jack Assembly	G	
H-2-690020	1-4	Shielded Receiver Assembly	S	Note: Important for Maintenance
H-2-690021	1-3	Line Conditioner & Control Electrical Panel Assembly	G	
H-2-690022	1	Shielded Receiver Tube Assembly	G	
H-2-690023	1	3" Ball Valve Modification"	G	
H-2-690024	1	Dust Cap and Sleeve Assembly	G	
H-2-690025	1-2	View Port Shielded Receiver	G	
H-2-690026	1-2	Shielded Receiver Electrical Installation	S	Note: Important for Maintenance
H-2-690027	1-2	Shielded Receiver Base Assembly	G	
H-2-690028	1-6	Shielded Receiver Weather Cover	G	
H-2-690030	1-4	Sampler Hoist Assembly	S	Note: Important for Maintenance
H-2-690031	1-3	Sampler Hoist Cable Feed Assembly	G	
H-2-690032	1	Sampler Hoist Cable Guide Assembly	G	
H-2-690033	1-2	Sampler Hoist Load Stand Assembly	G	

Table 4.4 RMCST 3 & 4 Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-690034	1-4	Sampler Hoist Housing Assembly	G	
H-2-690035	1-4	Breather Air Piping Installation	G	Note: Installed but not Used
H-2-690036	1-2	Sampler Hoist Cable Drum Assembly	G	
H-2-690037	1	Sampler Hoist Interlock Assembly	G	
H-2-690039	1	Remote Latch Unit Weight Assembly	G	
H-2-690040	1-5	RMCST Truck Bed Assembly	G	
H-2-690041	1-4	Rotary & Stationary Platform Rail Assembly	G	
H-2-690042	1-2	Stationary Platform Assembly	G	
H-2-690043	1	Shielded Receiver Lifting Frame Installation	G	
H-2-690044	1-2	Shielded Receiver Lifting Frame Assembly	G	
H-2-690046	1	Lower Frame Assembly	G	
H-2-690048	1	Lower Bearing Mount Assembly	G	
H-2-690049	1	Lower Frame & Rotary Stop Assembly	G	
H-2-690050	1-5	Drillhead Service Platform Installation	G	
H-2-690051	1-3	Quill Rod Assembly	G	Used as spare for Truck 2
H-2-690052	1-2	Grapple Rotary Valve Actuator	G	
H-2-690053	1-4	Penetration Rate Assembly	G	
H-2-690054	1-2	Rpm Sensing Ring Installation	G	

Table 4.4 RMCST 3 & 4 Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-690055	1-5	Grapple Hoist Installation	S	Note: Important for Maintenance
H-2-690056	1-2	Grapple Hoist Mounting Support	G	
H-2-690057	1-7	Grapple Hoist Assembly	S	Note: Important for Maintenance
H-2-690058	1-2	Grapple Hoist Housing Assembly	G	
H-2-690059	1-6	Inner/Outer Bellows Assembly	S	Note: Important for Maintenance
H-2-690060	1-4	Purge Gas Assembly	S	Note: Important for Maintenance
H-2-690061	1-4	Purge Gas Enclosure Assembly	G	
H-2-690062	1-5	Purge Gas Piping Assembly	S	Note: Important for Maintenance
H-2-690063	1-3	Purge Gas Connection Box	G	
H-2-690064	1-2	Purge Gas Cable Assembly	G	
H-2-690065	1	Up Limit Switch Proximity Probe	G	
H-2-690066	1-3	Drillhead Service Platform Assembly	G	
H-2-690067	1-5	Drillhead Service Platform Assy	G	
H-2-690068	1-7	Instrument Enclosure Assembly	S	Note: Important for Maintenance
H-2-690069	1-18	Alarm & Control Diagram	E	-Depicts Required Alarm Systems and Equipment Essential to Safe Operation
H-2-690070	1-7	Elementary Diagram	E	-Depicts Equipment Essential to Safe Operation

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Table 4.4 RMCST 3 & 4 Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-690071	1-17	Electrical Connection Diagram	S	Note: Important for Maintenance
H-2-690073	1-7	Electrical Installation	S	Note: Important for Maintenance
H-2-690074	1-2	Hydraulic Bottom Detector Alarm Panel Assembly	G	
H-2-690076	1-2	Drill Rig Junction Box Enclosure Assembly	G	
H-2-690080	1-3	Rotary Platform Assembly	S	Note: Important for Maintenance
H-2-690081	1-2	Rotary Platform Weldment	G	
H-2-690082	1	Bearing Plate Assembly	G	
H-2-690083	1	Rotary Stop Assembly	G	
H-2-690084	1	Slide Rail Details	G	
H-2-690085	1	Control Console Support Frame Assembly	G	
H-2-690090	1-3	Control Console Assembly	G	
H-2-690092	1-3	Motor Control Chassis Assembly	G	
H-2-690094	1-2	Encoder Panel Assembly	G	
H-2-690095	1-2	Loadcell Readout Assembly	G	
H-2-690096	1-2	Hydraulic & Sampler Actuator Control Panel	G	
H-2-690097	1	Panel Detail Circuit Breaker	G	
H-2-690098	1	Vent Panel Assembly	G	
H-2-690106	1-3	Front Jack Assembly	G	

Table 4.4 RMCST 3 & 4 Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-690143	1-2	Mechanical Remote Latch Unit	S	Note: Important for Maintenance
H-2-827188	1-9	Electrical Truck 3 Connection Diagram	E	-Depicts Electrical Power Diagrams
H-2-827189	1-7	Electrical Truck 4 Connection Diagram	E	-Depicts Electrical Power Diagrams
H-2-827192	1-2	Electrical Truck 3 One Line Diagram	E	-Depicts Electrical One-line
H-2-827193	1-2	Electrical Truck 4 One Line Diagram	E	-Depicts Electrical One-line

4.4.1 Summary RMCST 3 & 4 Drawings**Table 4.4.1 Summary RMCST 3 & 4 Drawings**

Category	Drawings	Sheets
General Drawings	59	138
Support Drawings.	18	94
Essential Drawings.	8	50

4.5 CORE SAMPLING SUPPORT EQUIPMENT DRAWINGS**Table 4.5 Core Sampling Support Equipment Drawings**

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-34727	1	Core Sampling Cask	G	Not Used

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Table 4.5 Core Sampling Support Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-34994	1	Core Sampling Shipping Cask Arrangement	G	Not Used
H-2-34995	1	Core Sampling Shipping Cask Detail	G	Not Used
H-2-34996	1	Core Sampling Shipping Cask	G	Not Used
H-2-36057	1	Core Sampling Flapper Assembly	G	Not Used
H-2-36511	1	Core Drill Pipe Fitting	G	Not Used
H-2-36514	1	Core Sampling Seal	G	Not Used
H-2-36766	1	Core Sampling Equipment Arrangement	G	Not Used
H-2-36769	1	Core Sampling 12-in Flange	G	Not Used
H-2-38078	1-2	On-site Transfer Cask Stand	S	
H-2-38079	1-6	On-site Transfer Cask	S	
H-2-38191	1	Arrangement and Detail Core Sampler and Drill	G	
H-2-38192	1	Assembly and Detail Adapter Flange Spray Washer Spray	G	
H-2-38193	1	Portable Core Sampling Platform	G	
H-2-38194	1	Drip Pan for Core Sample	G	
H-2-38195	1	Commercial Drill Equipment Mod	G	
H-2-38196	1	Misc Detail and Arrangement for Core Sampling	G	
H-2-74814	1-5	Cask Truck	G	

Table 4.5 Core Sampling Support Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-74815	1	Cask Truck	G	
H-2-74816	1	Cask Truck	G	
H-2-74819	1	Cask Truck	G	
H-2-74820	1	Cask Truck	G	
H-2-75053	1	Sample Truck Pig Transport Rack Assy	G	
H-2-79840	1	Service Trailer Truck 1	G	Not Used
H-2-79841	1-3	Service Trailer Truck 1	G	Not Used
H-2-79842	1-2	Service Trailer Truck 2	G	
H-2-79843	1-2	Service Trailer Truck 2	G	
H-2-81842	1-2	Cable Spray Washer Assy	G	
H-2-81843	1	Cable Spray Washer Housing	G	
H-2-81853	1-6	Support Truck	G	
H-2-83319	1-2	Cask Truck, Unit 1	G	
H-2-83320	1-4	Cask Truck, Unit 1	G	
H-2-83323	1-2	Cask Truck Detail, Unit 2	G	
H-2-83324	1-4	Unit 2 Cask Truck	G	
H-2-83325	1-5	Unit 1 Support Truck	G	
H-2-85064	1-3	Sampler Valve Housing Removal Tool	G	Used in Lab
H-2-85066	1-2	Changeout Valve	G	Not Used
H-2-85287	1-3	Mobile Air Charger Assembly	G	
H-2-85299	1-7	Nitrogen Trailer Hose Reel Installation	G	

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Table 4.5 Core Sampling Support Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-85299	8-10	Nitrogen Trailer Hose Reel Installation	E	-P & ID For N ₂ Trailer
H-2-85327	4	Panelboard Schedule, Electrical Distribution Trailer #1	E	Already Essential (Other sheets of this drawing are NOT for sampling equipment.)
H-2-85327	5	Panelboard Schedule, Electrical Distribution Trailer #2	E	Already Essential (Other sheets of this drawing are NOT for sampling equipment.)
H-2-85340	1	Distribution Trailer One-Line Diagram	E	-Depicts Electrical One-line
H-2-85341	1-2	Electrical Distribution Trailer #2	G	
H-2-85342	1	Electrical Distribution Trailer #1	G	
H-2-85345	1	Core Barrel Assembly	G	Not Used
H-2-85349	1-3	Riser Adapters Assorted	G	
H-2-85350	1-2	Sampling Electrical Distribution. Trailer	G	
H-2-85358	1-4	Portable Platform Assembly	G	
H-2-85601	1-2	Breathing Air Compressor Electrical One-Line Diagram	E	
H-2-85633	1-4	Structural Truck Ramp Platform Arrangement	G	
H-2-90257	1	Core Sampler Latch Mechanism	G	Not Used
H-2-91291	1-5	Sampler Hot Cell Unloader	G	Not Used
H-2-91330	1	Pull Rod Magnetic Retrieval Tool	G	

Table 4.5 Core Sampling Support Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-91331	1	Magnetic Positioning Tools	G	
H-2-91398	1	Sampler Hot Cell Unloader	G	Not Used
H-2-91422	1-2	Sampler Shoe Assembly	G	Not Used
H-2-91425	1-2	Drill Bit Modification	G	Not Used
H-2-91426	1	Drill Bit Modification	G	Not Used
H-2-91427	1-2	Drill Bit Plug Remover	G	Not Used
H-2-91490	1-5	Sampler Hot Cell Unloader	G	Not Used
H-2-91497	1-3	Core Sampler Assembly and Detail	G	Not Used
H-2-91498	1-3	Core Sampler Assembly and Detail	G	Not Used
H-2-91502	1	Core Catcher Assembly and Detail	G	Not Used
H-2-91503	1-3	Core Catcher Assembly and Detail	G	Not Used
H-2-91526	1	12" Tank Riser Arrangement	G	Not Used
H-2-91527	1-2	12" Drill Rod Guide	G	Not Used
H-2-91539	1	8" Tank Riser Arrangement	G	Not Used
H-2-91540	1-2	8" Drill Rod Guide	G	Not Used
H-2-91544	1	6" Tank Riser Arrangement	G	Not Used
H-2-91545	1-2	6" Drill Rod Guide	G	Not Used
H-2-91546	1	12" X 6" Riser Adapter Assembly	G	Not Used
H-2-91549	1	4" Tank Riser Arrangement	G	

Table 4.5 Core Sampling Support Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-91550	1-2	4" Drill Rod Guide	G	Not Used
H-2-91551	1	12" X 4" Riser Adapter	G	Not Used
H-2-91570	1-2	Hot Cell Sample Removal Tool	G	Not Used
H-2-91574	1-3	Drill String Arrangement	G	
H-2-91575	1	Core Barrel Assembly	G	Not Used
H-2-91670	1	Drill Rodwasher Housing Assembly and Details	G	
H-2-91671	1-3	Drill Rodwasher Manifold Assembly and Details	G	
H-2-91672	1	Cover Plate Assembly	G	
H-2-91673	1	12" X 18" Riser Adapter Assembly and Details	G	
H-2-91674	1-3	Transport Cask Stand Assembly and Details	G	
H-2-91675	1	Cask Adapter Assembly and Details	G	
H-2-91676	1	PVC Sleeve Details	G	Not Used
H-2-91677	1-2	Kamlock Adapter Assembly Core Sampler Truck #1	G	
H-2-91678	1	Dust Cap Assembly	G	
H-2-91684	1	Modified Quadralatch	G	Not Used
H-2-91687	1	Reusable Pull Rod Overpack Assembly	G	Not Used
H-2-94558	1	Sample Truck Hoist Trolley	G	
H-2-99332	1	12" X 4" Riser Adapter	G	

Table 4.5 Core Sampling Support Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-99333	1	12" X 6" Riser Adapter	G	
H-2-99334	1	12" X 8" Riser Adapter	G	
H-2-99335	1	12" X 4" Riser Adapter	G	
H-2-99336	1	6, 8 & 4" X 4" Offset Riser Adapter	G	
H-2-99346	1	4, 6, and 8" Waste Tank Riser Arrangement	G	
H-2-99347	1	6, 8, 10, & 12" Offset Riser Adapter	G	
H-2-99725	1-5	Transfer Cask-NCAW	S	
H-2-99727	1-2	Ebr-2 Storage Cask Modified	G	
H-2-99729	1	Ebr-2 Cask/shield Receiver Adapter	G	
H-2-99730	1	Drill String Burial Container	G	
H-2-99731	1-2	NCAW Transport Cask Lifting Bail	G	
H-2-99732	1	Drill String Burial Container	G	
H-2-99733	1-2	Drill String Burial Container Assembly	G	
H-2-99734	1	Drill String Burial Container Detail	G	
H-2-99735	1	Drill String Burial Container Detail	G	
H-2-99736	1	Drill String Burial Container Detail	G	
H-2-99738	1-2	Cask Field Loading Stand	G	

Table 4.5 Core Sampling Support Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-99739	1	Handling Tools NCAW Cask	G	
H-2-99740	1-2	Viewport Camera	G	
H-2-99741	1	Drill String Burial Container Support	G	
H-2-99742	1	Support Stand Detail	G	
H-2-99743	1	Support Stand Detail	G	
H-2-99744	1	Support Stand Detail	G	
H-2-690045	1-4	Maintenance Platform	G	
H-2-690124	1-4	Downforce Calibration Stand	G	
H-2-690125	1-2	Grapple Hoist Test Stand	G	
H-2-690126	1-4	Misc. Remote Handling Tools	G	
H-2-690127	1	Misc Equipment	G	
H-2-690128	1-2	Riser Sleeve Assembly	G	
H-2-690130	1-2	Int Drill Rod Removal Tool	G	
H-2-690131	1-2	Riser Sleeve Spray Wash Assembly	G	
H-2-690132	1	Riser Adapter Assembly	G	
H-2-690133	1-2	Sampler Changeout Assembly	G	
H-2-690134	1-5	Drill String Arrangement	E	- Depicts containment boundaries
H-2-690136	1-2	Offset Riser Adapter	G	
H-2-690137	1	Core Sampler Inserts	G	
H-2-690138	1-6	Footclamp Assy	G	
H-2-690139	1	Casting Finger	G	

Table 4.5 Core Sampling Support Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-690140	1-6	Core Sampler Assembly	S	Note: Important for Maintenance
H-2-690141	1-2	Sampler Pull Test Tool	G	
H-2-690144	1-4	Sampler Retrieval Tool Assy	G	
H-2-821457	1-4	Drill String Arrangements	E	-Depicts equipment Essential to Safe Operation
H-2-825312	1	Transfer Cask Modifications and Lifting Bail	G	
H-2-826513	1-2	Drill Rod Purge Installation	G	
H-9-000174	1	Purge Gas Trailer Assembly	G	Information from this drawings has been moved to H-2-85299
H-14-021922	1-2	Breathing Air Compressor P&ID	E	- Process and Instrumentation Diagram

4.5.1 Summary for Core Sampling Support Equipment Drawings**Table 4.5.1 Summary of Core Sampling Support Equipment Drawings**

Category	Drawings	Sheets
General Drawings	123	231
Support Drawings	5	20
Essential Drawings	7*	19

* Note: Drawing H-2-85299 which has both general and Essential drawings sheets is included in the Essential Drawing total.

4.6 RMCST SAMPLING EXHAUSTER DRAWINGS**Table 4.6 RMCST Exhauster Drawings**

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-14-100740	1-2	Misc Detail RMCS Exhauster C	G	
H-14-100742	1-2	Breather Vent Stack	G	
H-2-818186	1-4	Exhauster Assembly	G	Used by AR Vault
H-2-818188	1	Plenum Assembly	G	
H-2-818189	1-3	RMCS External Skid Electrical Details	G	Used by AR Vault
H-2-818201	1-2	RMCS Skid Electrical Assembly	G	
H-2-818202	1-4	Misc Detail Exhauster	G	
H-2-818204	1	Bottle Rack Assembly RMCS	G	Not used
H-2-818205	1	Pre Filter Stand Assembly RMCS	G	Not used
H-2-818206	1-2	Lift Assembly RMCS	G	
H-2-829081	1-2	Overall Assy Exhauster C	S	
H-2-829082	1-6	Mechanical Installation Exhauster C	S	
H-2-829083	1-3	Stack Instrumentation Exhauster C	S	
H-2-829084	1-3	Sampling Exhauster Heater Assembly Exhauster C	S	
H-2-829085	1-3	Skid Assembly Exhauster C	G	
H-2-829086	1-4	Instrument & Control Panel Assembly Exhauster C	S	Demonstrates Compliance with Laws & Regulations

Table 4.6 RMCST Exhauster Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-829087	1-5	Stack Enclosure Assembly Exhauster C	G	
H-2-829088	1-2	Record Sampler Enclosure Assembly Exhauster C	G	
H-2-829089	1-2	Cam Probe Enclosure Assembly Exhauster C	G	
H-2-829090	1-2	Lower Weather Shield Assembly Exhauster C	G	
H-2-829091	1-2	Upper Weather Shield Assembly Exhauster C	G	
H-2-829100	1	Drawing Tree Exhauster C	S	
H-2-829105	1-5	Electrical Installation	S	
H-2-829106	1	Piping and Instrumentation Diagram Exhauster C	E	
H-2-829107	1-2	Variable Frequency Drive Exhauster C	G	
H-2-829108	1-5	Instrument Enclosure Connection Diagram Exhauster C	S	
H-2-829109	1-7	Exhauster Electrical Elementary Dia. Exhauster c	S	
H-2-829110	1-3	Exhauster Electrical Interconnect Exhauster C	E	
H-2-829111	1-2	Junction Box Detail Exhauster C	G	
H-2-829120	1-2	Overall Assy Exhauster B	S	

Table 4.6 RMCST Exhauster Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-829121	1-6	Mechanical Installation Exhauster B	S	
H-2-829122	1-3	Stack Instrumentation Exhauster B	S	
H-2-829123	1-3	Sampling Exhauster Heater Assembly Exhauster B	S	
H-2-829124	1-3	Skid Assembly Exhauster B	G	
H-2-829125	1-4	Instrument & Control Panel Assembly Exhauster B	S	
H-2-829126	1-5	Stack Enclosure Assembly Exhauster B	G	
H-2-829127	1-2	Record Sampler Enclosure Assembly Exhauster B	G	
H-2-829128	1-2	Cam Probe Enclosure Assembly Exhauster B	G	
H-2-829129	1-2	Lower Weather Shield Assembly Exhauster B	G	
H-2-829130	1-2	Upper Weather Shield Assembly Exhauster B	G	
H-2-829134	1	Piping and Instrumentation Diagram Exhauster B	E	
H-2-829135	1-5	Electrical Installation Exhauster B	S	
H-2-829136	1-2	Variable Frequency Drive Exhauster B	G	
H-2-829137	1-5	Instrument Enclosure Connection Diagram Exhauster B	S	

Table 4.6 RMCST Exhauster Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-829138	1-7	Exhauster Electrical Elementary Dia. Exhauster C	S	
H-2-829139	1-3	Exhauster Electrical Interconnect Exhauster B	E	
H-2-829140	1	Junction Box Detail Exhauster B	G	
H-2-829141	1	Drawing Tree Exhauster B	S	Important to Maintenance

4.6.1 Summary for RMCST Exhauster Drawings**Table 4.6.1 Summary for RMCST Exhauster Drawings**

Category	Drawings	Sheets
General Drawings	26	60
Support Drawings.	18	72
Essential Drawings.	4	8

4.7 OTHER SAMPLING EQUIPMENT DRAWINGS**Table 4.7 Other Sampling Equipment Drawings**

Dwg.	Sht.	Description	Cat.	Justification/Notes
		AUGER SAMPLING DRAWINGS		
H-2-79960	1-7	Surface Sampler Auger Assembly	G	
H-2-826321	1-2	Auger Bit	G	

Table 4.7 Other Sampling Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
		GRAB SAMPLING DRAWINGS		
H-2-37844	1-3	Instrumentation Miscellaneous Installation Details	S	
H-2-85602	1-5	Supernatant and Sludge Sampler	S	
H-2-85645	1-2	Tri-Pod and Bottle Hoist for Supernatant and Sludge Sampler	S	
H-2-826597	1-2	Table Assembly for Supernatant and Sludge Sampler	S	
		VAPOR SAMPLING DRAWINGS		
		TYPE 3		
H-2-815402	1-2	VSS Piping and Instrumentation Diagram	G	Not Used
H-2-815403	1	VSS Mimic Panel Assemblies	G	Not Used
H-2-815404	1-2	VSS Control Rack Assemblies	G	Not Used
H-2-815405	1-2	VSS I/O Rack Module Assy	G	Not Used
H-2-815406	1	VSS Drawing Index Tree	G	Not Used
H-2-815407	1-3	VSS Exterior Component Rack Assemblies	G	Not Used
H-2-815408	1-19	VSS Control Diagram	G	Not Used
H-2-815409	1-3	VSS Control Rack Interconnect Diagram	G	Not Used
H-2-815410	1-2	VSS I/O Rack Interconnect Diagrams	G	Not Used
H-2-815411	1	VSS Cabling Arrangement	G	Not Used
H-2-815412	1-3	VSS Interior Interconnect Diagram	G	Not Used

Table 4.7 Other Sampling Equipment Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-2-815413	1	VSS Solid State Relay Panel Assy	G	Not Used
H-2-815414	1-5	VSS Facility Interior Electrical	G	Not Used
H-2-815415	1	VSS Cable Assemblies	G	Not Used
H-2-815417	1	VSS Intrinsic Barrier Box Assembly	G	Not Used
H-2-815418	1	VSS Heat Control Elementary Diagram	G	Not Used
H-2-815419	1-6	VSS Mechanical Installation	G	Not Used
		TYPE 4		
H-2-825301	1	In-Situ Sample Head Assembly & Details	S	
H-2-825313	1-7	Vapor Sampling Cart Assembly & Details	S	
H-2-825314	1-2	Vapor Sampling Cart Electrical Installation and Interconnect Diagram	S	

4.7.1 Summary for Other Sampling Equipment Drawings**Table 4.7.1 Summary for Other Sampling Equipment Drawings**

Category	Drawings	Sheets
General Drawings	19	63
Support Drawings.	7	22
Essential Drawings.	0	0

4.8 LIGHT DUTY UTILITY ARM (LDUA) DRAWINGS**Table 4.8 Light Duty Utility Arm (LDUA) Drawings**

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-6-14055	1	LDUA System Block Dia	G	Not Deployed
H-6-14057	1-2	LDUA Control System Block Dia	G	Not Deployed
H-6-14099	1	LDUA Purge Air Supply Assy	G	Not Deployed
H-6-14100	1-7	LDUA Operations Control Trailer Hanford	G	Not Deployed
H-6-14101	1	Wiring Diagram, Air Conditioning Control & Power, Hanford	G	Not Deployed
H-6-14102	1	Electrical Layout, Service Equipment & Grounding Scheme Hanford	G	Not Deployed
H-6-14103	1	Diagram, HVAC Piping Hanford	G	Not Deployed
H-6-14104	1	LDUA - OCT Ventilation Control Panel	G	Not Deployed
H-6-14105	1	Cable, Trailer Power Supply, 480V/3PH	G	Not Deployed
H-6-14106	1-2	Operation Control Trailer Instrument Rack Equipment Arrangement	G	Not Deployed
H-6-14107	1	LDUA Operations Control Trailer LAN and Video Cable Layout	G	Not Deployed
H-6-14109	1	LDUA System Power Distribution One-Line Dia.	G	Not Deployed
H-6-14110	1-3	LDUA Power Distribution Rack	G	Not Deployed
H-6-14111	1-2	LDUA Power Distribution Skid, etc.	G	Not Deployed

Table 4.8 Light Duty Utility Arm (LDUA) Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-6-14112	1-2	LDUA System Power Distribution Cable Assys	G	Not Deployed
H-6-14113	1	LDUA Fiber Optic Umbilical Interconnection Dia.	G	Not Deployed
H-6-14114	1	Control Network Interconnection Dia.	G	Not Deployed
H-6-14115	1	I/O Subsystem Interconnection Dia.	G	Not Deployed
H-6-14116	1	I/O Subsystem Converter and Terminal Block Assy	G	Not Deployed
H-6-14117	1-2	Connector Adapter Module Connection Dia. Etc.	G	Not Deployed
H-6-14118	1	Video Display and Recording Sys Interconnection Dia	G	Not Deployed
H-6-14119	1-2	Video System Panels General Arrangement	G	Not Deployed
H-6-14120	1	Video Display and Recording System Cable Assy	G	Not Deployed
H-6-14121	1	I/O Subsystem Cable Assy	G	Not Deployed
H-6-14125	1-4	ATIE Assy	G	Not Deployed
H-6-14126	1-2	ATIE Elementary Diagram and Panelboard Schedule	G	Not Deployed
H-6-14127	1	ATIE EE Patch Panel, 4300A2A1	G	Not Deployed
H-6-14128	1	ATIE OPTO-22 Drawer #1, 4220A2	G	Not Deployed
H-6-14129	1	ATIE Interlock Junction Drawer 4300A1A2	G	Not Deployed

Table 4.8 Light Duty Utility Arm (LDUA) Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-6-14130	1	At-Tank Instr. Enclosure Equipment Arrangement	G	Not Deployed
H-6-14131	1-2	At-Tank Instr. Encl. ATIE Interconnection Dia..	G	Not Deployed
H-6-14133	1	VPTO-22 Drawer No. 2 Wiring Dia.	G	Not Deployed
H-6-14134	1	ATIE Interlock Junction Drawer Wiring Dia.	G	Not Deployed
H-6-14135	1-3	At Tank Instr Enclosure ATIE Internal Cable Assy	G	Not Deployed
H-6-14140	1-3	LDUA Laser Alignment Details	G	Not Deployed
H-6-14142	1-2	Operation Overview Video Camera System	G	Not Deployed
H-6-14145	1-2	LDUA System Misc Cable Assy	G	Not Deployed
H-6-14150	1-2	Pneumatic System P & ID	G	Not Deployed
H-6-14152	1	Modified LDUA Outer Tube and Sheave Support Assy	G	Not Deployed
H-6-14160	1	Tooling Interface Plate Assy	G	Not Deployed
H-6-14170	1	LDUA Subsystem Controller Pendant Arrangement	G	Not Deployed
H-6-14171	1	LDUA Console Subsystem Control Panel Arrangement	G	Not Deployed
H-6-14172	1-3	Power Interface Module (LDUA)	G	Not Deployed
H-6-14173	1	Boot Clamp Elbow, Wrist Assy	G	Not Deployed
H-6-14174	1-9	LDUA System Name plate Sched.	G	Not Deployed

Table 4.8 Light Duty Utility Arm (LDUA) Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-6-14175	1-2	LDUA Truck Power Purge Elementary	G	Not Deployed
H-6-14176	1-2	LDUA In-Tank Materials	G	Not Deployed
H-6-14177	1-2	LDUA Outrigger Hydraulic Schematic	G	Not Deployed
H-6-14180	1-2	Brake Platform Mobile Deployment System	G	Not Deployed
H-6-14185	1	LDUA Shoulder Cable Harness Wiring Diagram	G	Not Deployed
H-6-14186	1-4	LDUA Subsystem Controller Wiring Diagram	G	Not Deployed
H-6-14200	1	UST-ID Overview Video Camera System, OVS, Control Box Schematic	G	Not Deployed
H-6-14201	1	UST-ID OVS Cable Reel Schematic	G	Not Deployed
H-6-14202	1	UST-ID OVS Camera Housing Schematic	G	Not Deployed
H-6-14203	1	UST-ID Video Systems User End Schematic	G	Not Deployed
H-6-14204	1	UST-ID OSVS Camera Housing Schematic	G	Not Deployed
H-6-14205	1-3	Overview Video System OVS Details	G	Not Deployed
H-6-14206	1	Overview Video System OVS Lamp Housing Weldment	G	Not Deployed
H-6-14207	1-3	OVS and OSVS Video Systems Overview Details	G	Not Deployed

Table 4.8 Light Duty Utility Arm (LDUA) Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-6-14208	1	OVS and OSVS Video Systems Overview Housing Weldments	G	Not Deployed
H-6-14209	1-4	OVS and OSVS Video System Deployment Stand Assy	G	Not Deployed
H-6-14210	1	OVS and OSVS Video System Deployment Stand Assy -Det.	G	Not Deployed
H-6-14211	1	OVS And OSVS Video Systems Deployment Stand Frame Subassy	G	Not Deployed
H-6-14212	1	OVS and OSVS Video Systems Deployment Stand Details-Ribbon Cable Drum	G	Not Deployed
H-6-14213	1	OVS and OSVS Video Systems Deployment Stand Details - Regular Cable Drum	G	Not Deployed
H-6-14214	1	OVS and OSVS Video Systems Deployment Stand Details-Box Subassembly	G	Not Deployed
H-6-14215	1	OVS and OSVS Video Systgems Deployment Stand Details-Camera HSG Sleeve	G	Not Deployed
H-6-14216	1	OVS and OSVS Bideo Systems Deployment Stand Misc. Details	G	Not Deployed
H-6-14217	1	VICOAX Transmitter Mods	G	Not Deployed
H-6-14218	1	VICON Transmitter PC Board Interface	G	Not Deployed
H-6-14242	1-2	High Resolution Stereoscopic Video Camera Sys HRSVS	G	Not Deployed
H-6-14243	1-3	High Resolution Stereoscopic Video Camera Sys HRSVS	G	Not Deployed

Table 4.8 Light Duty Utility Arm (LDUA) Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-6-14244	1	High Resolution Stereoscopic Video Camera Sys HRSVS	G	Not Deployed
H-6-14245	1	High Resolution Stereoscopic Video Camera Sys HRSVS	G	Not Deployed
H-6-14246	1	Closeup Stereo Video System Camera Housing Schematic	G	Not Deployed
H-6-14270	1-8	CVEE and HRSVS End to End Dwg-Det	G	Not Deployed
H-6-14271	1-3	WHC Power Chassis	G	Not Deployed
H-6-14279	1	Common Video End Effector CVEE Support Electronics	G	Not Deployed
H-6-14296	1	End Effector Handling System Weight Assy	G	Not Deployed
H-6-14297	1-2	LDUA Riser Isolation Valve Adap	G	Not Deployed
H-6-14298	1	LDUA TRIC Storage and Transport Stand	G	Not Deployed
H-6-14299	1	LDUA TRIC Rigging Fixture	G	Not Deployed
H-6-14301	1-3	Enclosure, TRIC, Specification Control Diagram	G	Not Deployed
H-6-14302	1	Plate, Interface TRIC Enclosure	G	Not Deployed
H-6-14303	1	Angle Mounting TRIC Enclosure	G	Not Deployed
H-6-14304	1-8	TRIC, Enclosure Assembly	G	Not Deployed
H-6-14305	1-8	End Effector Handling Sys Rails	G	Not Deployed
H-6-14306	1-4	Cart Assembly	G	Not Deployed
H-6-14307	1-9	End Effector Transport Bar	G	Not Deployed
H-6-14308	1	VPM Adapter	G	Not Deployed

Table 4.8 Light Duty Utility Arm (LDUA) Drawings

Dwg.	Sht.	Description	Cat.	Justification/Notes
H-6-14320	1-7	Gripper End Effector Assy	G	Not Deployed
H-6-14321	1-8	Camera Housing Assemblies	G	Not Deployed
H-6-14322	1-5	Gripper Assy	G	Not Deployed
H-6-14323	1	GEE Electrical Schematic	G	Not Deployed
H-6-14324	1	Cable Assy	G	Not Deployed
H-6-14325	1	Pneumatic Block Diagram	G	Not Deployed
H-6-14326	1-2	Pneumatic Rack Mount Assy	G	Not Deployed
H-6-14340	1-13	Decon Module Assy	G	Not Deployed
H-6-14341	1	LDUA Water Decon Trailer Piping Schematic Diagram	G	Not Deployed
H-6-14342	1-2	Water Decon Power and Control Wiring Diagram	G	Not Deployed
H-6-14345	1-4	Mounting Platform Assy	G	Not Deployed
H-6-15012	1	EREE Controller Electrical Schematic	G	Not Deployed
H-6-15013	1	EREE Electrical Schematic	G	Not Deployed

4.8.1 Summary for Light Duty Utility Arm Drawings**Table 4.8.1 Summary for Other Sampling Equipment Drawings**

Category	Drawings	Sheets
General Drawings	103	227
Support Drawings.	0	0
Essential Drawings.	0	0

5.0 SUMMARY

The results of the drawing evaluation of Characterization sampling equipment are summarized in Table 5.1. The table shows both number of drawings and number of sheets.

Table 5.1 Drawing Evaluation Summary

Equipment	Drawing Category		
	General (Dwgs/Sheets)	Support (Dwgs/Sheets)	Essential (Dwgs/Sheets)
Truck 1	28/40	13/44	5/14
Truck 1 & 2	28/46	2/4	0/0
Truck 2	60/212	0/0	0/0
Truck 3 & 4	59/138	18/94	8/50
Support Equipment	123/231	4/19	7/19
Exhauster	26/60	18/72	4/8
Other Sampling Equipment	19/63	7/22	0/0
LDUA	103/227	0/0	0/0
TOTALS	446/1015	62/255	24/91
GRAND TOTAL of Characterization Drawings (Dwgs/Sheets)		527/1355	

Currently, all Truck 3 & 4, exhauster, and support equipment essential/support drawings have been established and are being maintained. The Characterization Equipment Essential/Support Drawing Plan (HNF, 1999b) is also being maintained to document the sampling equipment drawing category. Truck 2 and LDUA drawings have been assigned a general drawing category since Truck 2 is on standby and LDUA is not deployed. Truck 1 essential/support drawings have not been established due to uncertainty about future use.

6.0 REFERENCES

Wilson, 1997, HNF-SD-WM-ETP-216, Rev. 1, *Engineering Task Plan for Truck 3 & 4 Drawing Compliance and Evaluation*, Lockheed Martin Hanford Corporation, Richland, Washington

HNF, 1999a, HNF-IP-0842, Sec 4.25, *TWRS Administration, Engineering Drawings*, Lockheed Martin Hanford Corporation, Richland, Washington

HNF, 1999b, HNF-3240, Rev. 3, *Characterization Equipment Essential/Support Drawing Plan*, Lockheed Martin Hanford Corporation, Richland, Washington.