Changes “Other Than Inconsequential” Require These Additional Reviews:

Joint Review Group:

USQ # TF-18-1542-S, Rev. 0

Change history (≤ last 5 Rev-Mods)

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<tr>
<td>D-3</td>
<td>10/04/2018</td>
<td>Operations Request</td>
<td>Change responsibility for initiating an in-process ALARA review from Rad Planner to Facilities Planning Manager.</td>
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<tr>
<td>D-2</td>
<td>09/18/2017</td>
<td>Operations request --WRPS-PER-2017-1322</td>
<td>Added new step to Environmental section. “3.4.4 Report work space air samples to WRPS Environmental Protection and appropriate WRPS Shift Office for grab air samples equal to or greater than 10 DAC within the work space AND/OR contamination found during post job radiological surveillance of the posted and controlled radiological boundary area boundary that exceeds the Radiological Work Plan (RWP).”</td>
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<td>D-1</td>
<td>06/12/2017</td>
<td>Environmental request</td>
<td>Deleted Environmental reference to the 0.2 DAC from Section 3.4, Step 3.4.13. Step 3.2.1 has been changed to read For mobile crane set-up, outrigger pads shall be sized as required by RPP-CALC-56716, “Soil Bearing Capacity for Crane Loads.”</td>
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<td>03/23/2017</td>
<td>Periodic Review</td>
<td>Added, edited and/or removed Steps in Section 3.1 Personnel Protection, 3.2 Equipment Safety, 3.3 Radiation and Contamination Control and 3.4 Environmental Compliance Added, edited and/or removed Steps in Section 4.3 Field Preparation. Added, edited and/or removed Steps in Section 5.2 Set up and Deploy ORSS, 5.3 Remove Deployment Equipment From Glove Bag, 5.4 Obtain Samples Using Sample Holder Assembly, 5.6 Reconfigure Riser Flange/Valve/Pipe Cap, 5.8 Records, Checklist 2, 3 and 4, Data Sheet 1 and Attachment 1</td>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions necessary for personnel to perform off riser grab sampling utilizing the Off Riser Sampling System (ORSS) with a glovebag.

1.2 Scope

1.2.1 This procedure must be worked in conjunction with an approved work package.

1.2.2 This procedure involves the set-up and operation of the ORSS to obtain in-tank waste samples from Single-Shell Tanks that have undergone retrieval operations.

1.2.3 This procedure can be performed in multiple locations. A work area and/or location specific hazard analysis must be performed prior to starting the activity per TFC-ESHQ-S_SAF-C-02.

2.0 INFORMATION

2.1 Terms and Definitions

- DAC - Derived Air Concentration
- DRI - Direct Reading Instrument
- ORSS Off Riser Sampling System
- EMI Electro Magnetic Interference.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Protection

**WARNING** - Failure to ensure hands are clear of reel, winch, and umbilical before turning reel to auto position could cause personnel injury.

**WARNING** - Operation of Handheld Radios within 8 ft. of the winch with the direction switch in Forward or Reverse may result in unexpected operation of the winch and personnel injury.

3.1.1 Industrial hygiene monitoring shall be performed in accordance with applicable Industrial Hygiene Sample Plans for Beryllium and Tank Vapors.

3.1.2 This activity may potentially expose workers to tank waste. Special PPE requirements (e.g., Silver Shield) may apply.

3.1.3 This activity may potentially expose workers to beryllium. All work activities will be performed in accordance to the Beryllium Hazard Assessment/Beryllium Work Permit when breaching systems or components that are contaminated or potential contaminated with tank waste containing Beryllium.

3.1.4 Employee performing work on the winch with winch guard removed shall have exclusive control of the power cord/plug.

3.2 Equipment Safety

**CAUTION** - Failure to ensure all power switches are in off/stop position before powering up could cause damage to ORSS components.

**CAUTION** - Failure to use Safety Lanyard while ORSS is being installed in top hat could result in ORSS dropping into riser/tank.

**CAUTION** - Failure to video monitor ORSS as it is lowered into tank could cause ORSS to strike bottom of tank too abruptly and result in damage.

3.2.1 For mobile crane set-up, outrigger pads shall be sized as required by RPP-CALC-56716, “Soil Bearing Capacity for Crane Loads.”
3.3 Radiation and Contamination Control

3.3.1 Work in radiological areas will be performed using a Radiological Work Permit following review by Radiological Control per the ALARA work planning procedure TFC-ESHQ-RP_RWP-C-03.

NOTE - A riser is considered to be “not open” if a barrier (e.g. sealed sleeving, certified glove bag, breather filter, etc.) exists between tank head space and the environment.

3.3.2 Respiratory protection is required when a riser is open to tank head space unless the tank is actively ventilated or when required by RWP.

3.3.3 High Radiation areas will be controlled per TFC-ESHQ-RP_MON-C-11.

3.3.4 When breaching radiological systems or components that are contaminated or potentially contaminated, ensure that a minimum of one engineered control is in place to ensure adequate contamination control and worker protection have been applied. In lieu of the use of an engineered control, the use of respiratory protection and appropriate personal protective clothing is required.

NOTE - Application of fixatives, keeping surfaces damp (misting, spritzing), damp rags are examples of effective methods of controlling the spread of contamination, but are not considered an engineered control.

3.3.5 Approved engineered controls for breaching contaminated systems include:

- Confinement Systems
  - Ventilation (permanently installed or temporary)
  - Portable air movers (e.g., point capture).
- Containments
  - Glovebags, sleeving, tents, or glove boxes.
3.4 Environmental Compliance

3.4.1 The following requirements from TFC-ESHQ-ENV-STD-06 must be met:

3.4.1.1 Containments used during the work must be in accordance with TFC-ESHQ-RP_RWP-C-02 latest revision, Attachment A, Containment Selection Guide.

3.4.1.2 Do not open pits or risers if sustained winds are greater than 25 mph.
- A local wind speed measurement device may be used in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area.
- Use of a local device and the measured wind speed readings taken from it must be documented in the Work Management System Work Record.

3.4.1.3 Minimize open riser time using valves, caps, adapters, or plugs as appropriate.

3.4.1.4 HPT coverage will be performed as specified in the Radiological Work Permit.

3.4.1.5 Equipment is decontaminated or contained when removed from tanks.

3.4.1.6 Equipment is decontaminated or contained when removed from tanks when \( \geq 50,000 \text{ dpm}/100 \text{ cm}^2 \) beta/gamma and/or \( \geq 70 \text{ dpm}/100 \text{ cm}^2 \) alpha.

3.4.1.7 Swipes will be taken to determine that the surface of the item or the outermost surface of the container are maintained \( <50,000 \text{ dpm}/100 \text{ cm}^2 \) beta/gamma and/or \( <70 \text{ dpm}/100 \text{ cm}^2 \) alpha.

3.4.1.8 Verify passive or active HEPA filtration on tanks.

3.4.1.9 Pre and post job surveys (smears) shall be taken.
3.4 Environmental Compliance (Cont.)

3.4.2 In accordance with TFC-ESHQ-ENV_RM-C-04, “Water Discharge in Tank Farms”, routine maintenance and operation activities may result in small incidental discharge of raw water as long as the below listed limits and conditions are met and discharge has been approved by Environmental. (ref. TFC-ESHQ-ENV_RM-C-04, Table 2, Water Discharge in Tank Farms for the listing of approved incidental discharges):

- No discharge from a single activity may exceed 60 gallons released to the soil
- Appropriate best management practices (BMPs) shall be implemented to prevent unnecessary discharges
- No ponding of liquid
- During pre-job planning, measures to limit soil erosion will be incorporated in the work plan
- During performance of the work, all measures to limit ponding and/or erosion will be implemented.

3.4.3 Immediately report any spills or releases to Central Shift Office. This includes any water discharge to surface contamination areas.

3.4.4 Report work space air samples to WRPS Environmental Protection and appropriate WRPS Shift Office for grab air samples equal to or greater than 10 DAC within the work space AND/OR contamination found during post job radiological surveillance of the posted and controlled radiological boundary area boundary that exceeds the Radiological Work Plan (RWP).

3.5 Limits

Operating Specification Documents

OSD-T-151-00013, Operating Specifications for the Single Shell Storage Tanks
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:

- Torque Wrench, calibrated, per packaging Engineer
- Socket, $\frac{15}{16}$ in.
- Open End Wrench, $\frac{15}{16}$ in.
- 2.5 mm Allen (if using off-riser)
- Lead blankets
- Rubber matting
- Scraper
- Funnel
- One gallon container
- Bottle holder (off-riser)
- 5/16 inch nut driver
- Umbilical Pass-Through Assembly (Consists of a split 3” x 2” PVC reducer, a slotted 2” PVC slip cap, and a slotted size 11 ½ rubber stopper).
4.2 Performance Documents

The following procedures/forms may be required to perform this procedure:

- TO-080-800, Prepare and Load Hedgehog II Waste Sample Containers & Steel PIGs
- TO-100-052, Perform Waste Generation, Segregation, Accumulation and Clean-up
- TO-040-540, Water Surveillance and Usage
- 2-MISC-049, Bolt Torquing Guidelines
- Site Form A-6002-893 RPP Pre-Job Briefing
- Site Form A-6003-180 Temporary Shielding Authorization Form
- Site Form A-6003-272 Glove Bag Certification Checklist
- Site Form A-6004-101 WRPS Job Hazard Analysis Checklist
- Site Form A-6005-915 WRPS High Radiation Area Establishment Checklist
- Site form BC-6001-326, Chain of Custody Record for WTS
- Route Map and Dome Load Form
- Bill of Material
- Job Specific RWP
- Industrial Hygiene Sample Plan
- RSR or ORRSR, as applicable
- Tank Sampling and Analysis Plan.

The following MSDS may be needed to perform this procedure:

- APIEZON N-(MSDS #025552)
- Simple Green (MSDS #012261)
- Quick’n Brite (MSDS #23671)
- Antistat (MSDS #54839)
- Aerokroil (MSDS #10231)
- Penetrating Oil (MSDS #11861)
- Nikal Anti-Seize (MSDS #32083)
- SS-30 (MSDS #14928)
- Jet-Lube Nuclear Non-metallic (MSDS #59488)
- Never-Seez (MSDS #59487)
- WD-40 (MSDS #12664B)
- Anchorlube G-771 (MSDS #10313).
4.3 Field Preparation

NOTE - Steps in Section 4.3 may be performed in any logical order.

- Section 4.3 may be repeated as necessary to facilitate sampling.

4.3.1 IF not already performed, OBTAIN a portable eyewash station(s) with drench hose as required by the JHA.

4.3.2 IF ORSS will remain on/in tank upon completion of sampling,

   OR

   IF top hat will remain on/in tank upon completion of sampling, CONFIRM Engineering has prepared an Engineering Change Notice (ECN) to document permanent facility changes.

4.3.3 IF documents required in Section 4.1, are available for field use, OBTAIN required documents.

4.3.4 MARK each sample bottle/jar with assigned sample number from Process Memo/Tank Sampling and Analysis Plan (TSAP)/Letter of Instruction (LOI).

4.3.5 PREPARE ORSS (Figure 1 and Figure 2 are examples of ORSS).

4.3.6 FWS COMPLETE verifications and actions listed on Checklist 1 - Prerequisite Checklist each shift.

4.3.7 ENSURE a work area and/or a location specific hazards analysis has been performed per TFC-ESHQ-S-SAF-C-02.

4.3.8 FWS PERFORM a pre-job briefing AND DOCUMENT on Form A-6002-893 each shift.
5.0 PROCEDURE

NOTE - Sections 5.1 and 5.2 may be repeated as necessary to facilitate sampling.

- If sampling is stopped or not completed, the applicable verifications and actions on the appropriate daily checklist will have to be completed again.

5.1 Sampling Preparation

5.1.1 PERFORM Pre-Job radiological survey.

5.1.2 FWS COMPLETE Checklist 2 - Daily Checklist.
5.2 Set up and Deploy ORSS

NOTE - Steps 5.2.1 through 5.2.6 may be performed independently, and repeated at any time during performance of this procedure.

- Radiological areas MAY BE down-posted when survey results allow. Down-posting is done at the discretion of the FWS and the HPT as conditions and work activities allow.

5.2.1 POST AND ADJUST the radiological postings as survey results and work activities require.

5.2.2 IF a newly established HRA is to be left unattended, COMPLETE WRPS High Radiation Area Establishment Checklist (Site Form A-6005-915) prior to the area being left unattended.

5.2.3 IF scaffold needs to be reconfigured, RECONFIGURE the scaffold to support sampling activities.

NOTE - Cameras are installed and removed in accordance with a separate Work Package.

5.2.4 RAISE/LOWER AND OPERATE camera(s) as necessary to support sampling.

5.2.5 APPLY fixative as needed to aid in contamination control.

5.2.6 IF radiological conditions require temporary/process shielding, OR

IF radiological conditions change to require temporary/process shielding at any time while performing this procedure, INSTALL temporary/process shielding per TFC-ESHQ-RP_MON-C-12. (Site Form A-6003-180)

5.2.7 IF not already installed, INSTALL ground cover/drape.

5.2.8 IF not already posted, POST the work area as a CA.

5.2.9 POST work area as a High Radiation Area (HRA).

5.2.10 CONTROL the drape as a High Contamination Area (HCA).
5.2 Set up and Deploy ORSS (Cont.)

5.2.11 IF active tank ventilation is not operating,

OR

IF required by RWP, POST the work area as an Airborne Radioactivity Area (ARA).

5.2.12 IF installed, REMOVE the following into bagging or sleeving:
- pipe cap
- flange
- valve
- shield plug
- top hat
- multi-port adaptor.

5.2.12.1 HPT PERFORM dose rate and removable contamination survey of all devices that are removed.

5.2.13 INSTALL riser top hat assembly for ORSS.

5.2.14 DECONTAMINATE the drape and riser as needed to support termination of HCA controls.

5.2.14.1 WHEN survey results indicate that HCA conditions do not exist, TERMINATE the HCA controls.
5.2 Set up and Deploy ORSS (Cont.)

5.2.15 PREPARE ORSS as follows:

5.2.15.1 POSITION the following power switches in OFF/STOP:
- Reel
- Winch
- Control Unit.

5.2.15.2 HOOK-UP the following cables:
- Pendant to control unit (if desired)
- Control unit to reel
- Umbilical from reel to ORSS.

5.2.15.3 CONNECT the following equipment to power source:
- Reel
- Control Unit.

5.2.15.4 POSITION speed control knob on pendent to its lowest setting.

5.2.15.5 TURN power to control unit on.

5.2.16 INSTALL ORSS as follows:

5.2.16.1 COMPLETE Functionality Test per Attachment 1.

5.2.16.2 IF the ORSS equipment fails prior to deployment into the tank, PERFORM the following:

   a. ENSURE power is OFF to the following:
      - Control unit
      - Winch
      - Reel.

   b. IF conditions require disconnecting the cables, DISCONNECT cables.

   c. PLACE equipment in safe condition.

5.2.16.3 FWS SIGN/DATE Attachment 1 and Checklist 4 that Functionality Test is complete.
5.2 Set up and Deploy ORSS (Cont.)

5.2.16.4 INSTALL staging bar onto ORSS.

5.2.16.5 FWS SIGN/DATE Checklist 4 for staging bar completion review.

**CAUTION**

Failure to use Safety Lanyard while ORSS is being installed in top hat could result in ORSS dropping into riser/tank.

5.2.16.6 INSTALL safety lanyard onto ORSS.

5.2.16.7 FWS SIGN/DATE Checklist 4 for safety lanyard completion review.

5.2.16.8 IF active tank ventilation is not operating,

_**OR**_

IF required by RWP, **POST** work as an ARA.

5.2.16.9 REMOVE riser cap.

5.2.16.10 INSTALL ORSS into riser assembly.

5.2.16.11 REMOVE safety lanyard.

5.2.16.12 INSTALL riser cap.

5.2.16.13 IF posted as ARA,

_**AND**_

AS survey results allow, **DOWNPOST** the ARA.

**NOTE** - Steps 5.2.17 through 5.2.21 may be performed at any time throughout the remainder of the procedure and may be repeated.

5.2.17 INSTALL glovebag.

5.2.18 STAGE AND ASSEMBLE equipment in glovebag.

5.2.19 PULL OUT umbilical.

5.2.20 INSTALL umbilical seal.

5.2.21 INSTALL TOC Containment Certification Card (BT-6005-999) on glovebag.
5.2 Set up and Deploy ORSS (Cont.)

Certify Glovebag

(HP) HOLD POINT

5.2.22 **PERFORM** initial certification of glovebag in accordance with Glovebag Certification Checklist. ([Site Form A-6003-272])

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<tr>
<th>Signature</th>
<th>Print (First and Last)</th>
<th>Date</th>
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5.2.23 **DOCUMENT** daily/shiftly inspections on the TOC Containment Certification Card (BT-6005-999) card.

**NOTE** - Step 5.2.24 may be performed at any time throughout the remainder of the procedure and may be repeated.

5.2.24 **IF** subsequently the glovebag is repaired, opened, or the configuration changed, **PERFORM** the following:

5.2.24.1 **RECERTIFY** glovebag.
5.2.24.2 **SIGN** an additional Hold Point on Data Sheet 1.
5.2.24.3 **DOCUMENT** the following on the work record.

- Any glove changes
- Any sleeving additions
- Any additional service sleeve breaches (e.g., where additional service leads are added/removed)
- Repairs of any holes, rips, or tears
- Return of glovebag to service following opening and use as non-certified containment (e.g., use as a drape)
- Any retrieval device changes
- Upon Radiological Control Management or Field Work Supervisor direction.
5.2  Set up and Deploy ORSS (Cont.)

Deploy ORSS

**WARNING**
Operation of Handheld Radios within 8 ft. of the winch with the direction switch in Forward or Reverse may result in unexpected operation of the winch and personnel injury.

5.2.25  **ENSURE** Handheld Radios are 8 ft. away from the winch **WHEN** the direction switch is in the Forward or Reverse mode.

**CAUTION**
Failure to ensure all power switches are in the off/stop position before powering up could cause damage to ORSS components.

5.2.26  **POSITION** the following power switches in OFF/STOP:
- Reel
- Winch
- Control Unit.

5.2.27  **ATTACH** umbilical to ORSS.

5.2.28  **POSITION** electrical connection on umbilical in locked position.

5.2.29  **ATTACH** lanyard on back of ORSS to the umbilical **AND**
**TIGHTEN** allen screw.

5.2.30  **REMOVE** winch guard.

5.2.31  **WRAP** umbilical around winch three (3) times.

5.2.32  **REINSTALL** winch guard.

5.2.33  **POSITION** umbilical on ORSS pulley assembly.

5.2.34  **PLUG-IN** winch.

5.2.35  **POSITION** speed control knob on pendent to its lowest setting.
5.2 Set up and Deploy ORSS (Cont.)

5.2.36 **TURN** power to control unit to ON.

5.2.37 **POSITION** clutch switch to OFF position on pendant. (Light will not be illuminated).

**WARNING**

Operation of Handheld Radios within 8 ft. of the winch with the direction switch in Forward or Reverse may result in unexpected operation of the winch and personnel injury.

5.2.38 **ENSURE** Handheld Radios are 8 ft. away from the winch **WHEN** the direction switch is in the Forward or Reverse mode.

5.2.39 **PUSH** ORSS Forward/Reverse toggle switch, located on pendant, to Reverse position.

5.2.40 **PULL OUT** E-STOP button to turn power on to reel.

5.2.41 **PUSH** the NORMAL/INVERS switch on reel to the NORMAL position.

**WARNING**

Failure to ensure hands are clear of reel, winch, and umbilical before turning reel to the auto position could cause personnel injury.

5.2.42 **ENSURE** hands are clear of reel, winch, and umbilical before turning reel to the auto position.

5.2.43 **TURN** reel AUTO switch to the AUTO ( ) position.

5.2.44 **TURN** tension knob to max position on reel (big weight).

5.2.45 **POSITION** speed knobs to lowest position on winch and reel.

5.2.46 **PLACE** winch direction switch in Reverse position.

**NOTE -** The following Step raises the ORSS to remove slack in umbilical.

5.2.47 **TURN** speed knob, located on winch enough to raise ORSS **AND** **PLACE** winch in OFF position.
5.2 Set up and Deploy ORSS (Cont.)

5.2.48 UN-PLUG winch.
5.2.49 REMOVE staging bar.
5.2.50 PLUG-IN winch.
5.2.51 POSITION speed knob to lowest setting on winch.
5.2.52 PLACE winch direction switch in Forward position.

**CAUTION**

Failure to video monitor ORSS as it is lowered into tank could cause ORSS to strike bottom of tank too abruptly and result in damage.

5.2.53 OBSERVE monitor as ORSS is lowered into tank AND DEPLOY umbilical from reel without any kinks.

**NOTE** - The following step may be performed at any time while performing this section.

5.2.54 IF the umbilical on the winch needs to be readjusted, PERFORM the following:

5.2.54.1 POSITION speed knob to lowest setting on winch.
5.2.54.2 PLACE winch direction switch to OFF position.
5.2.54.3 UNPLUG winch.
5.2.54.4 REMOVE winch guard.
5.2.54.5 READJUST umbilical cable.
5.2.54.6 ENSURE umbilical is wrapped three (3) times around the winch.
5.2.54.7 REINSTALL winch guard.
5.2.54.8 PLUG IN winch.
5.2.54.9 PLACE winch direction in FORWARD position.
5.2 Set up and Deploy ORSS (Cont.)

5.2.55 TURN winch speed knob to desired speed to lower into tank.

5.2.56 WHEN ORSS reaches tank bottom:

5.2.56.1 TURN winch speed knob to lowest position.

5.2.56.2 TURN winch direction switch to OFF position.

5.2.56.3 UNPLUG winch.

5.2.56.4 TURN reel Auto switch to STOP position.

5.2.56.5 PUSH power button to STOP (E-Stop) on reel.

5.2.56.6 TURN tension knob to zero position (small weight).

5.2.56.7 REMOVE guard.

5.2.56.8 UNWRAP umbilical from winch.

5.2.56.9 REINSTALL guard.

5.2.56.10 POSITION ORSS away from riser AND

DEPLOY remaining balance of umbilical to support sampling operation.
5.3 Remove Deployment Equipment From Glove Bag

5.3.1 IF the deployment equipment is not going to be removed from the glovebag, GO TO Section 5.4.

5.3.2 ENSURE top hat is covered/capped.

5.3.3 HPT PERFORM contamination survey of glovebag interior.

5.3.3.1 DECONTAMINATE as needed to support opening the glovebag.

(HP) HOLD POINT

5.3.4 HPT VERIFY contamination levels inside the glovebag are <50,000 dpm/100cm² beta-gamma and < 70 dpm/100cm² alpha.

[Signature] / [Print (First and Last)] / [Date]

5.3.5 OPEN the glovebag.

5.3.6 REMOVE deployment tools and equipment.

5.3.7 ENSURE all tools and equipment needed for sampling are staged in the glovebag.

(HP) HOLD POINT

5.3.8 PERFORM re-certification of glovebag in accordance with Glovebag Certification Checklist. (Site Form A-6003-272)

5.3.8.1 SIGN an additional Hold Point on Data Sheet 1.

5.3.8.2 DOCUMENT the reason for re-certification on the work record.
5.4 Obtain Samples Using Sample Holder Assembly

5.4.1 IF not already performed, POST work area as a High Radiation Area (HRA).

NOTE - Step 5.4.1.1 and 5.4.1.2 may be performed, and repeated at any time.

5.4.1.1 WHEN sampling is not being performed, DOWNPOST the HRA as survey results allow.

5.4.1.2 PRIOR to resuming sampling, POST work area as HRA.

NOTE - A camera will be used to monitor sample collection in Step 5.4.2. As a best practice, a camera monitor at the sampling location shall be used when available.

5.4.2 OBTAIN sample at depth/location specified on the applicable Process Memo/TSAP/LOI.

NOTE - Sub-steps 5.4.2.1 through 5.4.2.6 may be performed repeatedly and in any order to facilitate sample collection.

- 5.4.2.1 REMOTELY MANEUVER ORSS to support sampling operations.

- 5.4.2.2 PLACE sample bottle into sample carrier.

- 5.4.2.3 LOWER sample carrier, taking care to maintain cable tension.

- 5.4.2.4 DEPOSIT sample waste material into sample jar located in the sample carrier.

- 5.4.2.5 RAISE sample carrier.

- 5.4.2.6 HPT PERFORM dose rate survey of sample.
5.4 Obtain Samples Using Sample Holder Assembly (Cont.)

NOTE - Steps 5.4.3, 5.4.4 and 5.4.5 may each be performed at any time and repeated.

5.4.3 IF sample bottle is broken and/or spilled in glovebag, PERFORM the following:

5.4.3.1 IF there is the potential for a glovebag breach to release spilled sample material, ENSURE a catch containment is in place below the glovebag to contain any material which could be released.

5.4.3.2 ABSORB/CONTAIN tank waste as appropriate.

5.4.3.3 IF required, REMOVE waste and/or any broken bottle material from glovebag without breaking containment.

5.4.4 IF sample bottle is over-filled, LOWER back into tank and manipulate to remove excess material;

   OR

   REMOVE excess material from bottle in glove bag and discard back into riser using remote handling methods.

5.4.5 IF marked sample bottle is lost:

5.4.5.1 SUBSTITUTE an unmarked sample bottle.

5.4.5.2 IDENTIFY on chain of custody.

5.4.5.3 IF necessary to retake sample, GO TO Step 5.4.2.

5.4.6 LOAD sample into one of the following:

- Steel Pig
- Hedgehog II 250ml pig per TO-080-800, Section 5.2.
5.4 Obtain Samples Using Sample Holder Assembly (Cont.)

NOTE - Steps 5.4.7 can be performed any time after first sample event.

5.4.7 PREPARE AND SHIP sample(s) per TO-080-800.

5.4.8 IF stopping ORSS,

AND

WHEN sampling personnel will not be present, PERFORM the following to place ORSS in Stand-by Mode:

5.4.8.1 PLACE ORSS in safe configuration.

5.4.8.2 POSITION speed control knob on pendent to its lowest setting.

NOTE - A camera(s) must be installed and operated in accordance with an approved Work Package.

5.4.9 IF starting ORSS after being in Standby Mode:

5.4.9.1 POSITION speed control knob on pendent to its lowest setting.

5.4.9.2 TURN power ON to control unit.

5.4.10 IF more sampling is needed, REPEAT Steps 5.4.1 through 5.4.7.

5.4.11 IF sampling is complete, GO TO Section 5.5.
5.5 Perform Shutdown of ORSS

5.5.1 TURN power off to the following components:
- Winch
- Reel
- Control Unit.

5.5.2 UNPLUG all power cords.

5.5.3 IF ORSS will be stored permanently in the tank, MANUALLY FEED umbilical down sample riser AND LOWER AND DROP umbilical into tank.
5.6 Reconfigure Riser Flange/Valve/Pipe Cap

NOTE - Water additions to Single-Shell tanks shall be performed in accordance with OSD-T-151-00013 along with TO-080-720.

5.6.1 WHEN a flush of the Top Hat would be beneficial in reducing potential dose rate or contamination levels or as directed by the FWS, FLUSH Top Hat with up to 5 gallons of water.

5.6.2 FWS COMPLETE TO-040-540, Data Sheet 1, Raw Water Usage Data Sheet.

5.6.3 REMOVE glovebag without breaking containment (e.g., horse tail, cut and separate sleeving from top hat).

NOTE - If ORSS equipment (e.g., table, top hat) is to remain in place, the remaining steps in this Section may be delayed.

5.6.4 IF not already installed, INSTALL ground cover/drape.

5.6.5 CONTROL drape as HCA.

5.6.6 IF not already performed, POST work area as a High Radiation Area (HRA).

5.6.7 IF active tank ventilation is not operating,

    OR

    IF required by RWP, POST the work area as an Airborne Radioactivity Area (ARA).

5.6.8 REMOVE tophat into bagging.

5.6.9 HPT SURVEY riser flange for removable contamination.

5.6.9.1 IF > 50,000 dpm/100cm$^2$ beta-gamma or > 70 dpm/100cm$^2$ alpha, DECONTAMINATE to below these levels or until successive decontamination attempts result in no further reduction.
5.6 Reconfigure Riser Flange/Valve/Pipe Cap (Cont.)

5.6.10 IF previously removed, REPLACE the following:
- pipe cap
- flange
- valve
- shield plug
- top hat
- multi-port adaptor.

NOTE - Steps 5.6.11 through 5.6.14 may be performed concurrently or in any order.

5.6.11 WHEN survey results indicate that HCA conditions do not exist, TERMINATE the HCA controls.

5.6.11.1 DECONTAMINATE as necessary to support termination of HCA controls.

5.6.12 FWS NOTIFY/CONTACT the Facilities Planning Manager for initiating an in-process ALARA review. High Radiological Risk portion of work performed on this package is complete at this time.

Print: Facilities Planning Manager Notified ____________________________

Signature (FWS) Print (First and Last) Date

NOTE - Step 5.6.13 does not apply to top hats.

5.6.13 TORQUE all bolts as follows: (2-MISC-049)
- ⅞" bolts - 30 (25-35) ft.-lbs.
- ⅞", ⅞", 1" bolts - 40 (35-45) ft.-lbs.

OR

IF specific direction is provided in Work Package, TORQUE all bolts per Work Package.

5.6.14 PERFORM work area cleanup.

5.6.14.1 WHEN survey results allow, RETURN all postings to as found conditions.

5.6.14.2 WHEN additional decontamination is required. PERFORM decontamination to support re-posting.
5.7 Restore to Pre-Work Conditions

5.7.1 ENSURE work area is cleaned up per TO-100-052.

5.7.2 REMOVE equipment from work area (and BCA as directed by BWP).

5.7.3 DOCUMENT work area restoration on Checklist 3.

5.7.4 DECONTAMINATE AND RESTORE work area to As-Found radiological postings as survey results allow.

5.7.5 PERFORM Post-Job radiological survey AND RECORD survey number on Checklist 3.

5.7.6 PERFORM IH samples as directed by BWP and IHSP for Beryllium Down-Posting.

5.7.7 ENSURE signs/postings are appropriately marked in accordance with IH sampling results for Beryllium.

5.7.8 IF ORSS will remain on/in tank, NOTIFY Engineering that Facility Modification is complete.
5.8 Records

5.8.1 PERFORM the following for records identified within this procedure.

5.8.1.1 RECORD the number of times the record was generated in applicable column

OR

PLACE a check mark (✓) in the N/A column.

5.8.1.2 SUBMIT the package to the FWS/OE/Shift Manager.

<table>
<thead>
<tr>
<th>Records Submittal Checklist</th>
<th>Number of times completed</th>
<th>N/A (✓)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2 Set up and Deploy ORSS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5.2.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3 Remove Deployment Equipment From Glove Bag</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5.3.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5.3.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checklists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checklist 1 - Prerequisite Checklist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checklist 2 - Daily Checklist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checklist 3 - Work Complete Checklist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checklist 4 - Off-Riser Sampling System Work Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Sheets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Sheet 1 – Additional Glovebag Certification Hold Points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment 1 - Functionality Test</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FWS/OE/Shift Manager SEND the completed records to the Central Shift Office for records retention.

_________________________________________ / ______________________________ / __________________

Signature                  Print (First and Last)                  Date

FWS/OE/Shift Manager

The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS), is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
### Checklist 1 - Prerequisite Checklist

<table>
<thead>
<tr>
<th>TANK #</th>
<th>RISER #</th>
<th>WORK PKG #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PERFORM** the following:

**DATE:**

**SHIFT:**

**VERIFY** applicable Decon Facility/Trailer is available. N/A if not performing waste disturbing activity.

For all vehicles (including trailers) which have fuel systems and will be driven/towed inside the farm, **VERIFY** they are "TANK FARM ACCESS AUTHORIZED". A sticker should be located near the driver's side front of each vehicle that indicates this authorization.

**VERIFY** with the Shift Office that there are no AOPs in effect that will affect the area that sampling will be working in.

**VERIFY** the active ventilation systems are operational. **CONTACT** shift manager if active ventilation is/becomes inoperable during this shift. N/A if not actively ventilated tank.

**VERIFY** passive ventilation is operational N/A if not a passively ventilated tank.

**FWS Signature / Print (First and Last) Name**
### Checklist 2 - Daily Checklist

**PERFORM** the following:

<table>
<thead>
<tr>
<th>DATE</th>
<th>SHIFT</th>
</tr>
</thead>
</table>

**RECORD** DRI survey form number.

<table>
<thead>
<tr>
<th>DRI#</th>
<th>DRI#</th>
<th>DRI#</th>
</tr>
</thead>
</table>

**PERFORM** the following:

<table>
<thead>
<tr>
<th>DATE</th>
<th>SHIFT</th>
</tr>
</thead>
</table>

**RECORD** Pre-Job Radiological Survey number.

<table>
<thead>
<tr>
<th>Survey#</th>
<th>Survey#</th>
<th>Survey#</th>
</tr>
</thead>
</table>

### Checklist 3 - Work Complete Checklist

**TANK#** ____________________________  **WORK PKG #** ____________________________

<table>
<thead>
<tr>
<th>Step</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.7.3</td>
<td><strong>ENSURE</strong> work area is cleaned up and all equipment removed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signature</th>
<th>Print (First and Last)</th>
<th>Date</th>
</tr>
</thead>
</table>

**FWS**

<table>
<thead>
<tr>
<th>5.7.5</th>
<th><strong>RECORD</strong> Post-Job Radiological survey number:</th>
</tr>
</thead>
</table>

____________________________
### Checklist 4 - Off-Riser Sampling System Work Complete

<table>
<thead>
<tr>
<th>Step</th>
<th>Condition</th>
<th>✓ Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2.16.3</td>
<td>Functionality Test has been completed per Attachment 1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Signature / Print (First and Last) / Date</td>
<td></td>
</tr>
<tr>
<td>5.2.16.5</td>
<td>Staging bar has been installed onto Off-Riser Sampling System.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Signature / Print (First and Last) / Date</td>
<td></td>
</tr>
<tr>
<td>5.2.16.7</td>
<td>Safety lanyard has been installed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Signature / Print (First and Last) / Date</td>
<td></td>
</tr>
</tbody>
</table>
Off Riser Grab Sampling Using a Glovebag

Data Sheet 1 – Additional Glovebag Certification Hold Points

(HP) HOLD POINT

5.2.24.1 **PERFORM** certification of glovebag in accordance with Glovebag Certification Checklist. (Site Form A-6003-272)

________________________/________________________/________________________

Signature Print (First and Last) Date

(HP) HOLD POINT

5.2.24.1 **PERFORM** certification of glovebag in accordance with Glovebag Certification Checklist. (Site Form A-6003-272)

________________________/________________________/________________________

Signature Print (First and Last) Date

(HP) HOLD POINT

5.2.24.1 **PERFORM** certification of glovebag in accordance with Glovebag Certification Checklist. (Site Form A-6003-272)

________________________/________________________/________________________

Signature Print (First and Last) Date
Figure 1 – Off-Riser Sample Carrier

Eye Bolt w/nut SST

Hose Clamp SST

Sample Bottle
Figure 2 - Off-Riser Sampling System

Off Riser Grab Sampling Using a Glovebag
### Attachment 1 - Functionality Test

<table>
<thead>
<tr>
<th>Test</th>
<th>✓ one</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OK</td>
</tr>
<tr>
<td>Clutch ON</td>
<td></td>
</tr>
<tr>
<td>Lights ON</td>
<td></td>
</tr>
<tr>
<td>Off-Riser Sampling System moves in...</td>
<td></td>
</tr>
<tr>
<td>Forward</td>
<td></td>
</tr>
<tr>
<td>Left</td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td></td>
</tr>
<tr>
<td>Reverse</td>
<td></td>
</tr>
<tr>
<td>Tool Arm moves Up/Down</td>
<td></td>
</tr>
<tr>
<td>Scoop Pan/Tilt</td>
<td></td>
</tr>
<tr>
<td>Scoop Open/Close</td>
<td></td>
</tr>
<tr>
<td>Place Off-Riser in Riser Deployment Position</td>
<td></td>
</tr>
<tr>
<td>Lights OFF</td>
<td></td>
</tr>
<tr>
<td>Scoop in Closed Position</td>
<td></td>
</tr>
<tr>
<td>Scoop in Up Position</td>
<td></td>
</tr>
<tr>
<td>Arm in Down Position</td>
<td></td>
</tr>
<tr>
<td>Clutch OFF</td>
<td></td>
</tr>
<tr>
<td>Control Unit in OFF position</td>
<td></td>
</tr>
<tr>
<td>Unhook Umbilical from ORSS</td>
<td></td>
</tr>
</tbody>
</table>

FWS Review:

_________________________ / ___________________________ / __________________________
Signature                  Print (First and Last)                 Date
FWS

COMMENTS: