Sump #2 Alarms

ETF Alarm Response Procedure		Effluent Treatment Facility

USQ Not Required – ETF is a <Hazard Category 3 Radiological Facility

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<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
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<td>A-1</td>
<td>11/01/2018</td>
<td>Periodic Review</td>
<td>Updated equipment labels and completed editorial changes.</td>
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Sump #2 Alarms

Alarm

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RECORDS

No records are generated during the performance of this procedure.
Sump #2 Alarms

**SUMP TANK 2 LAH-20B005**

**DESCRIPTION:** SUMP TANK 2 ANNULUS LINER LEVEL HI (LAH-20B005)

<table>
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<th>Setpoint:</th>
<th>1 inch</th>
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<td>Alarm Summary Screen</td>
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<td>N/A</td>
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**NOTE** - Alarm response procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Immediate Actions:**

1. **CONTACT SOM AND REVIEW** historical trend for Sump 2.
2. **DISPATCH** operator to Sump 2 to check for obvious indications of instrument failure.
3. **IF** directed by SOM, **PUMP** Sump 2 in MANUAL per ETF-20B-001.
4. **(SOM) REVIEW** ETF-AOP-85B-001 or ETF-ERP-85B-003 for applicability.

**Supplemental Actions:**

**NOTE** - The following step institutes a RCRA permit requirement.

5. **(SOM) IF** the alarm is caused by an instrument failure or malfunction, **INSTITUTE** a daily visual inspection of the annulus area **AND**
   **RECORD** inspection need in ETF Control Room Logbook.

**Possible Causes**

1. Sump tank 2 liner leakage.
2. LS 20B005 failure.

**References:**

**Drawings:**
- H-2-89304, Logic Diagram, Utility System Sump Tanks
- H-2-88991, Sump Tank System P&ID

**Documents:**
- ETF-AOP-85B-001, Response to Safety Shutdown
- ETF-ERP-85B-003, Emergency Spill or Release at ETF
- ETF-20B-001, Sump Tank/Pump System Operation
- Non-conformance report 050715, ETF Sumps
Sump #2 Alarms

SUMP TANK 2 LAH 20B006

DESCRIPTION: SUMP TANK 2 INLET TRENCH LEV HI (LAH-20B006)
Setpoint: 1 inch
Alarm Location: LS-20B006
Graphic: Alarm Summary Screen
Indications N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Immediate Actions:

[1] LOCATE leakage source, per Attachment 1, condition 2.
[4] ENSURE the trench inlet drain strainer is clear of debris.
[5] GO TO ETF-ERP-85B-003, as necessary.

Possible Causes

1. Leakage from secondary treatment train tanks.
2. Leakage from main treatment train tanks.
3. Leakage from other sump tank input sources.
4. Tank overflow(s).
5. Liquid spill(s).
6. Clogged inlet trench drain strainer.

References:

Drawings: H-2-89304, Logic Diagram, Utility System Sump Tanks
          H-2-88991, Sump Tank System P&ID
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF
           Non-conformance report 050715, ETF Sumps
### SUMP TANK 2 LAH-20B002

**DESCRIPTION:**  
SUMP TANK 2 LEVEL HI (LAH-20B002)

**Setpoint:**  
73%

**Alarm Location:**  
LT-20B002

**Graphic:**  
Alarm Summary Screen

**Indications:**  
N/A

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**NOTE -** Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

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**Immediate Actions:**

**NOTE -** Alarm for operator information only.

[1] **IF** desired, **START** sump pump in MANUAL per ETF-20B-001.

---

**Possible Causes**

1. Sump level increasing from normal process operations.
2. Sump level increasing from process system failures.

---

**References:**

**Drawings:**  
H-2-89304, Logic Diagram, Utility System Sump Tanks  
H-2-88991, Sump Tank System P&ID

**Documents:**  
ETF-20B-001, Sump Tank/Pump System Operation  
Non-Conformance Report 050715, ETF Sumps
Sump #2 Alarms

SUMP TANK 2 LAHH-20B002

DESCRIPTION: SUMP TANK 2 LEVEL HI HI (LAHH-20B002)
Setpoint: 96%
Alarm Location: LT-20B002
Graphic: Alarm Summary Screen
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. Second sump pump starts on HI HI level, if in AUTOMATIC operation.

Immediate Actions:

CAUTION
Sump 2 level in excess of 140% exceeds the maximum allowable stress level of the sump walls.

[1] VERIFY both sump pumps are running on graphic Sump.
[2] VERIFY historical trend for LT20B002, Sump 2, is recording sump level data.
[3] DETERMINE inflow source per Attachment 1, condition 1 or 2.

Supplemental Actions:


(Continued on Next Page)
Sump #2 Alarms

SUMP TANK 2 LAHH-20B002 (CONT.)

DESCRIPTION: SUMP TANK 2 LEVEL HI HI (LAHH-20B002
Setpoint: 96%
Alarm Location: LT-20B002
Graphic: Alarm Summary Screen
Indications: N/A

(Continued)

Possible Causes

1. High inflow to Sump Tank 2.
2. Sump pumps 2A and 2B not in AUTO.
5. Valve misalignment.

References:

Drawings: H-2-89304, Logic Diagram, Utility System Sump Tanks
H-2-88991, Sump Tank System P&ID
Documents: Non-Conformance Report 050715, ETF Sumps
Sump #2 Alarms

**SUMP TANK 2 LAL-20B002**

**DESCRIPTION:** SUMP TANK 2 LEVEL LO (LAL-20B002)

- **Setpoint:** 37%
- **Alarm Location:** LT-20B002
- **Graphic:** Alarm Summary Screen
- **Indications:** N/A

**NOTE** - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

**Automatic Actions:**

1. Sump pump(s) will stop if operating in MANUAL.

**Immediate Actions:**

[1] ENSURE both sump pumps are shut down per ETF-20B-001.

**Possible Causes**

1. Low level reached in Sump Tank 2 if sump pumps are in MANUAL.
2. MCS failed to turn off sump pump(s) at 40% sump level, if in AUTO.
3. Level transmitter LT-20B002 failed or out of calibration.
4. Loss of air.

**References:**

- **Drawings:** H-2-89304, Logic Diagram, Utility System Sump Tanks
  H-2-88991, Sump Tank System P&ID
- **Documents:** ETF-20B-001, Sump Tank/Pump System Operation
  Non-Conformance Report 050715, ETF Sumps
Sump #2 Alarms

SUMP TANK 2 2ND PUMP RUN FAIL

DESCRIPTION: SUMP TANK 2 2ND PUMP RUN FAIL
Setpoint: Logic permissive(s) not met
Alarm Location: Logic generated alarm
Graphic: Alarm Summary Screen
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Immediate Actions:

[1] CHECK Sump Tank 2 LAHH (≥ 96%) on graphic Sump.
[2] DETERMINE inflow source per Attachment 1, condition 1 or 2.
[3] ISOLATE inflow source AND/OR SECURE applicable operations to minimize inflow.
[4] IF surge tank level is equal to or greater than LAH, RESPOND per ETF-ARP-60A-001.

Possible Causes

1. Second sump pump did not start on Sump Tank 2 LAHH, due to pump failure.
   NOTE - An interlock prevents Sump Tank 2 pump operation in AUTO mode when the surge tank level is greater than the high alarm setpoint.
   - Both pumps need to be in AUTO for operation.
2. Surge tank LAH.

References:

Drawings: H-2-89304, Logic Diagram, Utility System Sump Tanks
          H-2-88991, Sump Tank System P&ID
Documents: ETF-ARP-60A-001, Surge Tank System
          Non-Conformance Report 050715, ETF Sumps
SUMP TANK 2 OPERATION FAIL

DESCRIPTION: SUMP TANK 2 OPERATION FAILURE
Setpoint: Logic permissive(s) not met
Alarm Location: Logic generated alarm
Graphic: Alarm Summary Screen
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Immediate Actions:

[1] IF alarm SUMP TANK 2, PUMP P2A is in, GO TO this ARP, SUMP TANK 2, PUMP 2A, alarm response.
[2] IF alarm SUMP TANK 2, PUMP P2B is in, GO TO this ARP, SUMP TANK 2, PUMP 2A, alarm response.
[3] VERIFY P2A (20BP2A) and P2B (20BP2B) are in AUTO.
[4] IF surge tank level is equal to or greater than LAH, RESPOND per ETF-ARP 60A-001.

Possible Causes

1. One or both Sump Tank 2 sump pumps failed to start on demand in AUTO.
2. One or both Sump Tank 1 sump pumps failed to start on demand in AUTO.
   NOTE: An interlock prevents sump tank 2 pump operation in AUTO mode when the surge tank level is greater than the high alarm setpoint.
3. Surge tank LAH.
4. AUTO condition not met for pumps.
5. Breaker for 20B-P-2A or -2B is open (tripped or off).

References:

Drawings: H-2-89304, Logic Diagram, Utility System Sump Tanks
          H-2-88991, Sump Tank System P&ID
Documents: ETF-ARP-60A-001, Surge Tank System
           Non-Conformance Report 050715, ETF Sumps
Sump #2 Alarms

SUMP TANK 2 PUMP 2A ALARM

DESCRIPTION: SUMP TANK 2 PUMP 2A (20B-P-2A)
Setpoint: Logic permissive(s) not met
Alarm Location: Logic generated alarm
Graphic: Alarm Summary Screen
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Immediate Actions:
[1] VERIFY circuit breaker MCC-2 (20B-P-2A) is ON.

Supplemental Actions:

Possible Causes
1. Circuit breaker MCC-2 (20B-P-2A) off/tripped.
3. Control fuses blown.

References:
Drawings: H-2-89304, Logic Diagram, Utility System Sump Tanks
          H-2-88991, Sump Tank System P&ID
Documents: Non-Conformance Report 050715, ETF Sumps
Sump #2 Alarms

SUMP TANK 2 PUMP 2B ALARM

DESCRIPTION: SUMP TANK 2 PUMP 2B (20B-P-2B)
Setpoint:Logic permissive(s) not met
Alarm Location:Logic generated alarm
Graphic:Alarm Summary Screen
Indications:N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Immediate Actions:
[1] VERIFY circuit breaker MCC-2 (20B-P-2B) is ON.

Supplemental Actions:

Possible Causes
1. Circuit breaker MCC-2 (20B-P-2B) off/tripped.
3. Control fuses blown.

References:
Drawings: H-2-89304, Logic Diagram, Utility System Sump Tanks
H-2-88991, Sump Tank System P&ID
Documents: Non-Conformance Report 050715, ETF Sumps
Attachment 1- Sump Tank 2 Potential Sources of Inflow

Condition 1 - Sump is filling, but no water is evident in trench leading to sump.

1. **DETERMINE** source of water to sump from following potential sources (P&ID Number referenced where applicable for further information):
   a. Verification transfer pumps/lines closed drains (H-2-88985)
   b. Cooling Water PSV-95C-121 discharge (H-2-88998)
   c. Verification return pump/line closed drains (H-2-88985)
   d. Verification tank berm sump pump (H-2-88985)
   e. Cooling water blowdown pump alternate discharge path (H-2-88998)
   f. Cooling Water Blowdown Pump drip tray (H-2-88998)
   g. Effluent pH adjustment tank pump/line closed drains (H-2-88984)
   h. Effluent pH adjustment tank overflow (H-2-88984)
   i. Effluent samplers SP-60C-228 and -229 drains (H-2-88984)
   j. 2nd RO:
      i. 2nd RO feed tank overflow and feed tank pumps/lines closed drains (H-2-88981)
      ii. PSV-60F-251 discharge (H-2-88981)
      iii. PSV-60F-288 discharge (H-2-88982)
      iv. 2ND RO drip tray and conductivity analyzer drains (H-2-88982)
   k. 1st RO:
      i. 1st RO feed tank overflow and feed tank pumps/lines closed drains (H-2-88980)
      ii. 1ST RO drip tray and conductivity analyzer drains (H-2-88980)
      iii. PSV-60F-099 discharge (H-2-88980)
      iv. PSV-60F-089 discharge (H-2-88979)
   l. RO/FILTER CIP system (H-2-89343):
      i. CIP tank overflow and cip pumps closed drains
      ii. CIP drip tray
      iii. CIP filter drains and PSV-60B-031 discharge
Attachment 1- Sump Tank 2 Potential Sources of Inflow (Cont.)

m. Degas column (H-2-89334):
   i. Overflow
   ii. Pump/line closed drains
   iii. Blower line closed drain
   iv. TOC analyzer drain
n. \( \text{H}_2\text{O}_2 \) decomposer vessel drain, vent and psv outlet valves (H-2-89332)
o. pH adjustment tank (H-2-88977):
   i. Overflow
   ii. Pumps/lines closed drains
p. TOC analyzer drain
q. UV OX 1 drain and vent valves (H-2-88976)
r. UV OX 2 drain and vent valves (H-2-89342)
s. Decon shower and sink drains (West RCA exit area)
t. Sample prep room sink drains (sample prep room)
u. \( 4\% \text{H}_2\text{SO}_4 \) and \( 4\% \text{NaOH} \) solution tank overflows (H-2-88992)

Condition 2 - Sump is filling and water is evident in west and/or middle sump trenches.

1. **WALK DOWN** trenches to determine cause of water.