



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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October 17, 2019

19-NWP-166

Brian T. Vance, Manager  
Office of River Protection  
United States Department of Energy  
PO Box 450, MSIN: H6-60  
Richland, Washington 99352

Re: Request to Discharge Air Compressor Cooling Water from the Effluent Treatment Facility to the State-Approved Land Disposal Site under ST0004511, Miscellaneous Streams State Waste Discharge Permit

Reference: Letter 19-ECD-0045, dated June 25, 2019, "Submittal of the State Waste Discharge Permit ST0004500 Renewal Application for the State-Approved Land Disposal Site"

Dear Brian Vance:

The Department of Ecology (Ecology) received a request via email from the United States Department of Energy Office of River Protection (USDOE-ORP) to discharge air compressor cooling water from the Effluent Treatment Facility to the State-Approved Land Disposal Site (SALDS).

Ecology approved the request to discharge air compressor cooling water in a response email (Enclosure) dated September 26, 2019. Our decision was based on the following information:

- The source water for the air compressor is raw Columbia River water, meeting the criteria for a discharge under the Miscellaneous Streams State Waste Discharge Permit (ST4511) conditions S1.A.2.b and S3.B.
- Discharge will take place at the SALDS infiltration gallery, an engineered structure, meeting condition S1.A.2.b of ST4511.
- Discharge volume is not to exceed the SALDS facility loading limits for maximum daily discharge flow: 670,000 gallons per day, and maximum average monthly discharge flow: 250,000 gallons per day, as identified in ST0004500 (ST4500) condition S7.
- Air compressor cooling water discharge will only take place during the outage period of December 16, 2019, through May 28, 2020.
- Discharge Monitoring Reports for ST4500 will continue to be submitted during the outage period.

It is Ecology's understanding that supplemental information to the ST4500 permit renewal application will soon be submitted. We understand that this supplemental information will request the air compressor cooling water be included as an authorized discharge to the SALDS. We request that this supplemental material include a drawing or figure depicting the configuration of the air compressor and its connection to the SALDS system.

Please note that to support USDOE-ORP's schedule and issue a renewed ST004500 permit by March 2020, Ecology must receive the aforementioned supplemental information from you by October 21, 2019. We will not issue a completeness determination on the ST4500 permit renewal package (reference) until we receive the supplemental information.

Until the permit is renewed to reflect the addition of the air compressor cooling water, please continue to request Ecology's approval before sending wastewater that is not specifically authorized by ST4500 to the SALDS.

If you have any questions, please contact Katie Hall, Permit Lead, at [katie.hall@ecy.wa.gov](mailto:katie.hall@ecy.wa.gov) or (509) 372-7885.

Sincerely,



Mark Pakula  
Waste Management Section Manager  
Nuclear Waste Program

kh/jlg

Enclosure

cc electronic:

Rana Evans, USDOE-ORP  
Christopher Kemp, USDOE-ORP  
Richard Valle, USDOE-ORP  
Jessica Joyner, WRPS  
Behr Turner, WRPS  
ERWM Staff, YN  
Ken Niles, ODOE  
Katie Hall, Ecology  
Joseph Lippold, Ecology  
Ellie Ott, Ecology  
Mark Pakula, Ecology  
John Temple, Ecology  
Environmental Portal  
Hanford Facility Operating Portal  
MSA Correspondence Control  
USDOE-ORP Correspondence Control  
WRPS Correspondence Control

cc:

Mason Murphy, CTUIR  
Jack Bell, NPT  
Laurene Contreras, YN  
Rex Buck, Jr, Wanapum  
Susan Leckband, HAB  
Hanford Administrative Record

**From:** [Garcia, Jennifer L.](#)  
**To:** [Garcia, Jennifer L.](#)  
**Subject:** RE: ETF Outage & Maintenance and ST0004511 Compliant Discharges  
**Date:** Thursday, October 17, 2019 4:27:36 PM

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**From:** Hall, Katie (ECY)  
**Sent:** Thursday, September 26, 2019 4:31 PM  
**To:** 'Turner, Behr G' <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>  
**Cc:** Joyner, Jessica A <[jessica\\_a\\_joyner@rl.gov](mailto:jessica_a_joyner@rl.gov)>; Temple, John (ECY) <[jtem461@ecy.wa.gov](mailto:jtem461@ecy.wa.gov)>; Evans, Rana <[rana\\_evans@orp.doe.gov](mailto:rana_evans@orp.doe.gov)>; Hendrickson, Douglas W <[douglas\\_w\\_hendrickson@rl.gov](mailto:douglas_w_hendrickson@rl.gov)>  
**Subject:** RE: ETF Outage & Maintenance and ST0004511 Compliant Discharges

Hi Behr,

Thank you very much for providing this information. Based on the information below, we are approving the discharge of the air compressor cooling water to the SALDS. The discharge is to not exceed the facility loading limits within ST4500 and must meet all applicable limitations in the ST4511 permit.

Discharge of the air compressor cooling water to the SALDS, under condition S1.A.2.b (for “air compressors”) of ST4511 requires this condensate be discharged to an engineered structure. In this case, the SALDS is the engineered structure. Since the ST4511 permit is site-wide and not specific to location, the volume limitations identified in ST4511 are not appropriate for the site-specific discharge at the SALDS. The discharge limitations of ST4500 for flow—maximum daily discharge flow: 670,000 gallons per day, and maximum average monthly discharge flow: 250,000 gallons per day—need to be met.

We understand that the air compressor cooling water discharge is temporary and will cease by May 28, 2020 when the outage is complete. This authorization is only valid for the outage period identified in the email below and such authorization shall not set precedence for future outages. The Treated Effluent Disposal Facility is the preferred discharge point for discharges under ST4511, as stated in ST4511 permit condition S4.A.5. This condition also states that discharge to other permitted wastewater treatment facilities is acceptable, as long as the discharge meets the waste acceptance criteria of that facility.

We understand that supplemental information to the ST4500 permit application will be provided to request that the air compressor cooling water be included as an authorized discharge to SALDS. Until the ST4500 permit is issued and includes the air compressor cooling water, please submit a request similar to the one below for each outage/period during which this stream is requested to be sent to the SALDS.

We will follow up this email with a letter communicating our decision outlined above.

Please feel free to contact us with any questions or concerns.

Thank you,

Katie Hall  
Environmental Specialist  
Department of Ecology-Nuclear Waste Program  
(509) 372-7885

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**From:** Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>  
**Sent:** Monday, September 23, 2019 1:07 PM  
**To:** Hall, Katie (ECY) <[KAWI461@ECY.WA.GOV](mailto:KAWI461@ECY.WA.GOV)>  
**Cc:** Joyner, Jessica A <[jessica\\_a\\_joyner@rl.gov](mailto:jessica_a_joyner@rl.gov)>; Temple, John (ECY) <[jtem461@ECY.WA.GOV](mailto:jtem461@ECY.WA.GOV)>; Evans, Rana <[rana\\_evans@orp.doe.gov](mailto:rana_evans@orp.doe.gov)>; Hendrickson, Douglas W <[douglas\\_w\\_hendrickson@rl.gov](mailto:douglas_w_hendrickson@rl.gov)>; Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>  
**Subject:** RE: ETF Outage & Maintenance and ST0004511 Compliant Discharges

Katie,

This clarifying information is being delivered at the request of Rana Evans, ORP.

Normal ETF operations and its cooling tower blowdown discharge to SALDS were described during the ST4500 permit renewal process that yielded the current ST4500 permit. See attached letter FH-0601340, "Responses to the State of Washington, Department of Ecology Letter Requesting Additional Data of the Application for Renewal of State Waste Discharge Permit ST4500."

Specifically, the cooling tower blowdown discharged to SALDS was estimated at 8 gallons per minute (FH-0601340). This number was derived from the raw water usage at the ETF cooling tower. The total raw water usage for the ETF cooling tower was estimated at 18 gallons per minute which comprises 10 gallons per minute as cooling tower evaporation and 8 gallons per minute as cooling tower blowdown that is discharged to SALDS (See attachment [PDF Page 8 of 17; Response Number 5]).

With the ETF cooling tower blowdown unavailable to be reused as air compressor cooling water during the upcoming outage and maintenance period, the discharge of air compressor cooling water to SALDS is requested as described herein.

Thank you again Katie,

-behr

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**From:** Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>  
**Sent:** Thursday, September 19, 2019 4:26 PM  
**To:** Hall, Katie (ECY) <[KAWI461@ECY.WA.GOV](mailto:KAWI461@ECY.WA.GOV)>

**Cc:** Joyner, Jessica A <[jessica\\_a\\_joyner@rl.gov](mailto:jessica_a_joyner@rl.gov)>; Temple, John (ECY) <[jtem461@ECY.WA.GOV](mailto:jtem461@ECY.WA.GOV)>; Evans, Rana <[rana\\_evans@orp.doe.gov](mailto:rana_evans@orp.doe.gov)>; Hendrickson, Douglas W <[douglas\\_w\\_hendrickson@rl.gov](mailto:douglas_w_hendrickson@rl.gov)>; Stenson, Brent R <[brent\\_r\\_stenson@rl.gov](mailto:brent_r_stenson@rl.gov)>; Wall, Jeremy M <[Jeremy\\_M\\_Wall@rl.gov](mailto:Jeremy_M_Wall@rl.gov)>; Wood, Richard Robert H <[richard\\_robert\\_h\\_wood@rl.gov](mailto:richard_robert_h_wood@rl.gov)>; Halgren, Dale L <[dale\\_l\\_halgren@rl.gov](mailto:dale_l_halgren@rl.gov)>; Bowman, Mark W <[mark\\_w\\_bowman@rl.gov](mailto:mark_w_bowman@rl.gov)>; Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>

**Subject:** RE: ETF Outage & Maintenance and ST0004511 Compliant Discharges

Hi Katie,

The air compressor cooling water discharge to SALDS will cease once the outage is complete.

Normal ETF operations will resume after outage.

-behr

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**From:** Hall, Katie (ECY) <[KAWI461@ECY.WA.GOV](mailto:KAWI461@ECY.WA.GOV)>

**Sent:** Thursday, September 19, 2019 4:09 PM

**To:** Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>

**Cc:** Joyner, Jessica A <[jessica\\_a\\_joyner@rl.gov](mailto:jessica_a_joyner@rl.gov)>; Temple, John (ECY) <[jtem461@ECY.WA.GOV](mailto:jtem461@ECY.WA.GOV)>; Evans, Rana <[rana\\_evans@orp.doe.gov](mailto:rana_evans@orp.doe.gov)>; Hendrickson, Douglas W <[douglas\\_w\\_hendrickson@rl.gov](mailto:douglas_w_hendrickson@rl.gov)>; Stenson, Brent R <[brent\\_r\\_stenson@rl.gov](mailto:brent_r_stenson@rl.gov)>; Wall, Jeremy M <[Jeremy\\_M\\_Wall@rl.gov](mailto:Jeremy_M_Wall@rl.gov)>; Wood, Richard Robert H <[richard\\_robert\\_h\\_wood@rl.gov](mailto:richard_robert_h_wood@rl.gov)>

**Subject:** RE: ETF Outage & Maintenance and ST0004511 Compliant Discharges

Hi Behr,

Thank you so much for the quick response.

Can you please verify if the air compressor cooling water discharge will cease once the outage is complete? Your original email notes that the discharge would occur during the outage, but we need to confirm if the estimated volumes below are stand-alone or in addition to the periodic discharges from the Verification Tanks during facility operation.

Thank you,

Katie Hall  
Environmental Specialist  
Department of Ecology-Nuclear Waste Program  
(509) 372-7885

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**From:** Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>

**Sent:** Thursday, September 19, 2019 3:12 PM

**To:** Hall, Katie (ECY) <[KAWI461@ECY.WA.GOV](mailto:KAWI461@ECY.WA.GOV)>

**Cc:** Joyner, Jessica A <[jessica\\_a\\_joyner@rl.gov](mailto:jessica_a_joyner@rl.gov)>; Temple, John (ECY) <[jtem461@ECY.WA.GOV](mailto:jtem461@ECY.WA.GOV)>; Evans, Rana <[rana\\_evans@orp.doe.gov](mailto:rana_evans@orp.doe.gov)>; Hendrickson, Douglas W <[douglas\\_w\\_hendrickson@rl.gov](mailto:douglas_w_hendrickson@rl.gov)>; Stenson, Brent R <[brent\\_r\\_stenson@rl.gov](mailto:brent_r_stenson@rl.gov)>; Wall, Jeremy M



<[Jeremy\\_M\\_Wall@rl.gov](mailto:Jeremy_M_Wall@rl.gov)>; Wood, Richard Robert H <[richard\\_robert\\_h\\_wood@rl.gov](mailto:richard_robert_h_wood@rl.gov)>; Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>

**Subject:** RE: ETF Outage & Maintenance and ST0004511 Compliant Discharges

Katie,

Thank you for the expeditious response.

The answers to your questions are provided below in red.

Thank you again,

-behr

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**From:** Hall, Katie (ECY) <[KAWI461@ECY.WA.GOV](mailto:KAWI461@ECY.WA.GOV)>

**Sent:** Thursday, September 19, 2019 1:38 PM

**To:** Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>

**Cc:** Joyner, Jessica A <[jessica\\_a\\_joyner@rl.gov](mailto:jessica_a_joyner@rl.gov)>; Temple, John (ECY) <[jtem461@ECY.WA.GOV](mailto:jtem461@ECY.WA.GOV)>;

Evans, Rana <[rana\\_evans@orp.doe.gov](mailto:rana_evans@orp.doe.gov)>; Hendrickson, Douglas W

<[douglas\\_w\\_hendrickson@rl.gov](mailto:douglas_w_hendrickson@rl.gov)>

**Subject:** RE: ETF Outage & Maintenance and ST0004511 Compliant Discharges

Hi Behr,

Thank you for reaching out to us with this question. I have included some questions below that need answered before we can make a determination.

- What specific activities will be performed at ETF during the outage that would generate a wastewater subject to ST4511? **The discharge of air compressor cooling water.**
- Is there an expected volume that will be produced by these activities? **20 gallons per minute; 28,800 gallons per day; 460,800 gallons for Calendar Year 2019; 4,291,200 gallons for Calendar Year 2020; 4,752,00 gallons in total.**
- What is the expected timeframe of the outage? **Calendar Year 2019: (December 16 – December 31); Calendar Year 2020: (January 1 – May 28)**
- Would the maintenance discharges be routed to the Verification Tanks prior to discharge? **No**
- Will the wastewater enter the ETF sump/collection system, or will it be captured and routed independent of the ETF system? **The raw water will be routed through the cooling water system back to the blowdown pump 95C-P-2, which will direct the discharge to SALDS.**
- Will the wastewater come into contact with any ETF process equipment? **No**
- How will you ensure that the discharge will meet the Groundwater Quality Criteria of WAC 173-200 as required by ST4511 Condition S1.B.3? **Per the next bullet provided by Ecology, "The ST4511 permit application proved that the source waters for ST4511 can meet the GWQC." The source water is raw water that is authorized by ST4511 Special Condition S3.B. Attached is an email from MSA Water Purveyor, Brent Stenson, which contains raw water analyses from 181-B. None of the constituents within the raw water analyses exceeded groundwater criteria (WAC 173-200).**

- The ST4511 permit application proved that the source waters for ST4511 can meet the GWQC. Please state what the source water is for the ETF maintenance wastewater and if there is any concern that the GWQC cannot be met. The source water is raw water supplied by the Mission Support Services Contractor. The ST4511 permit application proved that the source waters for ST4511 can meet the GWQC.
- When does ORP/WRPS need a final determination by Ecology on this matter? As soon as possible to support work planning and outage preparations.

Please note that all discharges to SALDS must be included in the DMRs as required by ST4500 permit condition S3.A. The discharge must also meet the limitations for flow as presented in ST4511 and ST4502. Katie, thank you for providing clarification that this discharge must be included in the DMRs as required by ST4500 Special Condition S3.A. The ST4511 discharge to SALDS will not exceed the SALDS facility loading criteria quantified in ST4500 Special Condition S7. The air compressor discharge is compliant with the discharge flow limitations within ST4511 Special Condition S1.B.1 and S1.B.2.

Please let me know if you have any further questions.

Thank you,

Katie Hall  
Environmental Specialist  
Department of Ecology-Nuclear Waste Program  
(509) 372-7885

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**From:** Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>  
**Sent:** Thursday, September 19, 2019 9:09 AM  
**To:** Hall, Katie (ECY) <[KAWI461@ECY.WA.GOV](mailto:KAWI461@ECY.WA.GOV)>  
**Cc:** Joyner, Jessica A <[jessica\\_a\\_joyner@rl.gov](mailto:jessica_a_joyner@rl.gov)>; Temple, John (ECY) <[jtem461@ECY.WA.GOV](mailto:jtem461@ECY.WA.GOV)>; Evans, Rana <[rana\\_evans@orp.doe.gov](mailto:rana_evans@orp.doe.gov)>; Hendrickson, Douglas W <[douglas\\_w\\_hendrickson@rl.gov](mailto:douglas_w_hendrickson@rl.gov)>; Turner, Behr G <[behr\\_g\\_turner@rl.gov](mailto:behr_g_turner@rl.gov)>  
**Subject:** ETF Outage & Maintenance and ST0004511 Compliant Discharges

Good Morning Katie,

This inquiry is being delivered at the request of Rana Evans, ORP.

The 200 Area Effluent Treatment Facility (ETF) is preparing for an outage and maintenance period beginning in Fall of 2019. During the outage and maintenance period, can the State-Approved Land Disposal Site serve as the engineered structure to receive ST0004511 (ST4511) compliant discharges authorized by ST4511 Special Condition S1.A.1 and ST4511 Special Condition S1.A.2?

Thank you,

-behr