DOE-ID NEPA CX DETERMINATION
Idaho National Laboratory

CX Posting No.: DOE-ID-INL-15-031

SECTION A. Project Title: Central Facilities Area (CFA) Sewage Treatment System Lagoon #3 and Land Application Site Closure

SECTION B. Project Description:

The CFA Sewage Treatment Plant (STP) has been operating under Wastewater Reuse Permits (WRPs) (formerly Wastewater Land Application Permits) since it began operation. Treated wastewater was discharged to the land application site (73.5 acres) by pumping wastewater from Lagoon #3, which is a 0.5 acre polishing lagoon, through a pivot irrigation system. Recently, due to a number of issues, Sitewide Facility and Operations Management has decided to let the permit expire and operate the CFA STP as a total evaporative system.

There were a number of contributing factors that led to the decision to no longer land apply, including the following:

1. The steady decline of personnel and active facilities located at CFA.
2. The bentonite liners require water so that they don't crack and leak. The current and projected number of personnel located at CFA and wastewater discharges aren't large enough to keep the liners wet as needed. As a result, supplemental water is required to be pumped to the STP to prevent bentonite liner damage. The supplemental water use contradicts the Idaho National Laboratory's (INL's) sustainability requirements for water usage.
3. The facility has not land applied since 2011 and has only land applied for two of the five permit years. Total quantities of wastewater land applied for the five year permit was 3.42 million gallons. Comparatively, in 2004 the total amount of wastewater land applied was 13.64 million gallons.
4. A Water Balance Study was performed by JUB Engineering and results were taken into consideration when deciding a path forward for the CFA STP.
5. Idaho Administrative Procedures Act (IDAPA) 58.01.16 and Compliance Activity CA-141-03 of CFA STP Wastewater Reuse Permit LA-000141-03 require lagoons to be seepage tested, and in the case of the CFA STP, the seepage rate is to be below 0.25 inches/day. In the summer of 2014 all lagoons were seepage tested, and the seepage rate for Lagoon #3 was above the allowable seepage rate at 0.455 inches/day.

Before the seepage tests and Water Balance Study were completed, a conservative decision was made to renew the Wastewater Reuse Permit. A renewal application (INL/EXT-14-32752) was submitted in September 2014 meeting the permit requirement to submit the application six months prior to permit expiration.

Once the seepage tests were completed and the results showed Lagoon #3 exceeded the allowable seepage rate, Battelle Energy Alliance, LLC (BEA) personnel notified the Idaho Department of Environmental Quality (DEQ) (Correspondence Control Number [CCN] 234194) and evaluated regulatory options identified in IDAPA 58.01.16.493.04. These include the following:

a) Repair the leak and retest for compliance.
b) Re-line the lagoon and retest for compliance.
c) Drain the lagoon in an approved manner and stop using the lagoon.
d) Determine the impact of the leaking lagoon on the environment based on ground water sampling and modeling. The procedure for performing ground water sampling and monitoring must be approved by DEQ.

After considering these regulatory options and the previously mentioned contributing factors, Facility Management decided to drain the lagoon in an approved manner and stop using the lagoon. In addition, IDAPA 58.01.17.801.02 and CFA STP Municipal Wastewater Reuse Permit (MWRP) LA-000141-03 requires closure of the lagoon. Closure consists of the following actions:

a) Participating in a pre-site closure meeting with DEQ
b) Developing a site closure plan in accordance with the agreements made at the pre-site closure meeting
c) Submitting the completed site closure plan to DEQ for review and approval
d) Closing according to the approved closure plan.

The pre-site closure meeting with DEQ was held on December 17, 2014. BEA communicated plans to not renew the Wastewater Reuse Permit, drain and no longer use Lagoon #3 or the land application system, and close both Lagoon #3 and the land application site. In the meeting, DEQ agreed with the approach and stated that one closure plan could be submitted for both Lagoon #3 and the land application site. DEQ stated the closure plan could be fairly simple, such as a two page letter format, and should be submitted prior to March 1, 2015. DEQ was in agreement to allow Lagoon #3 to dry out naturally (infiltration/evaporation) as long as it was dry before the end of summer (2015) and that Lagoon #3 could be left in place and did not have to be filled in with soil.

On February 23, 2015 BEA submitted the INL CFA STP Closure Plan for Lagoon #3 and the Wastewater Land Application Area.

In the Closure Plan BEA is proposing the following actions:

- Isolate Lagoon #3 by closing (completed) and locking the gate valve on the inlet line to Lagoon #3.
- Place an expandable plug in or a fitted cap over the discharge line leading to Lagoon #3.
- Disconnect the electric power to the pump that discharges to the center-pivot. The center-pivot would be removed and excessed.
- Dry out Lagoon #3 by allowing the remaining water (approximately 2 ft.) to evaporate.

- If Lagoon #3 is not dry by the end of August 2015, pump the remaining water into Lagoon #2.
- Determine if sludge is present in Lagoon #3.
- If sludge is present, characterize the sludge (Resource Conservation and Recovery Act [RCRA] solid waste) by sampling for gross alpha/beta/gamma and RCRA Toxicity Characteristic Leaching Procedure (TCLP) metals. NOTE: If sludge is present, the volume of sludge is expected to be very minimal.
- If gross alpha/beta/gamma results are greater than screening levels, complete isotopic analysis.
- If Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) risk-based screening levels are exceeded, Lagoon #3 will be evaluated as a CERCLA new site or cleaned up to levels below screening levels.
- Use the Lagoon #3 sludge (if present) samples as a worst case scenario for characterizing the land application area. If no sludge is present use the Lagoon #3 liner samples as a worst case scenario for characterizing the land application area.
- Perform additional sampling (gross alpha/beta/gamma and RCRA TCLP metals) at the land application area if the Lagoon #3 sludge (if present) or liner (if no sludge present) results are above CERCLA risk-based screening levels.
- If the additional land application area sample results show CERCLA risk-based screening levels have been exceeded, evaluate the land application area as a CERCLA new site or clean up the affected areas to levels below the screening levels.
- If the sample results show the land application area is below CERCLA concern, the land application area will be left in its current condition.
- Leave Lagoon #3 in place until the remaining CFA STP lagoons are closed. Additional characterization and CERCLA screening will be performed on the remaining lagoon system when it is closed.

Currently (5/11/2015) DEQ has not responded to the Closure Plan. This Environmental Checklist covers closure of Lagoon #3 and the Wastewater Land Application Area.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions - Fugitive dust may be generated if sludge or soil removal is necessary. All reasonable precautions would be taken to prevent particulate from becoming airborne. If dust control methods are required, the method used and frequency applied must be recorded in the project records and would be used to demonstrate compliance with the INL Title V Air Permit.

Discharging to Surface-, Storm-, or Ground Water - If Lagoon #3 has not dried out before the end of August 2015, the remaining wastewater will be pumped into Lagoon #2 (bentonite lined lagoon). The CFA STP Lagoon #3 and the Land Application Area will no longer be used. The current Municipal Wastewater Reuse Permit (LA-000141-03) will not be renewed and wastewater land application will no longer occur.

Disturbing Cultural or Biological Resources - Sampling, vehicle traffic and other disturbances must stay within the outer wheel ring of the pivot in order to protect sensitive cultural resource areas. Project personnel must contact Brenda Pace (526-0916) if activities require disturbance outside the outer wheel ring.

Breeding bird surveys will be required if project activities include off road vehicle travel or excavation. Jackie Hafla (227-9031) should be contacted to complete surveys one week prior to off road travel and excavation activities.

Generating and Managing Waste - All waste generated from this activity will be managed in accordance with laboratory procedures. Pollution prevention/waste minimization will be implemented where economically practicable to reduce the volume and/or toxicity of waste generated. All waste generated will be transferred to Waste Generator Services (WGS) for appropriate disposition. All waste generated from these activities will have an identified disposition path prior to it being generated.
Sludge will be required to be sampled, removed and disposed of if encountered in Lagoon #3. Sludge/sample waste will be characterized and disposed through WGS. The center pivot irrigation sprinkler system will be excessed. If soil or liner sample results are hazardous, additional removal/disposal or CERCLA evaluation will be necessary.

Releasing Contaminants - Wastewater has been discharged to the land application area throughout the operating life of the system. Wastewater discharges had to be sampled to meet permit defined discharge limits. In addition, soil sampling of the land application area has been required in past permits. Even though these discharges have been in compliance with permit conditions, contaminant release will be diminished with the closure of the land application area.

Using, Reusing, and Conserving Natural Resources - Reduction in the number of CFA employees and building deactivation/demolition in the last 10 years has resulted in a reduction of wastewater. Over the past few years, supplemental water has been sent to the sewage system so that the Lagoon bentonite liners won't dry out, crack and leak. Millions of gallons of supplemental water has been added to these lagoons in the last few years and contradicts the sustainability goals and objectives the INL has for water usage. Eliminating the need for supplemental water will help with the sustainability issues and goals.

All material will be reused and/or recycled where economically practicable. All applicable waste would be diverted from disposal in the landfill when possible. Project personnel would use every opportunity to recycle, reuse, and recover materials and divert waste from the landfill when possible.

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SECTION G. Determine the Recommended Level of Environmental Review (or Documentation) and Reference(s): Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

For Categorical Exclusions (CXs), the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not “connected” to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References: 10 CFR 1021, Appendix B, B1.26 "Small water treatment facilities"

Justification: Project activities are consistent with 10 CFR 1021, Appendix B, B1.26 "Siting, construction, expansion, modification, replacement, operation, and decommissioning of small (total capacity less than approximately 250,000 gallons per day) wastewater and surface water treatment facilities whose liquid discharges are externally regulated, and small potable water and sewage treatment facilities."

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) ☐ Yes ☒ No

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on: 6/1/2015