

1. Applicant Summary Information:

Company: (Name and Address) Strongbox Water Solutions, LLC

Points of Contact	Company	Email	Phone
Tony D. Haag	Strongbox	tdhaag@strongboxwater.com	3177781335
Edny Garcia	Strongbox	egarcia@strongboxwater.com	7193604719
Paul Kite	Strongbox	pkite@strongbox.co	3175901026

Company Description and Produced Water Treatment Experience:

Strongbox Water Solutions has developed a multi-patented, and commercialized unique Mobile Flash Evaporation System (MFVS) that flash vaporizes excess water from aqueous solutions such as industrial waste water, leachate, and oil/gas production water aquifers onto the atmosphere. It simultaneously produces and collects a heavy condensed residual solution of salts, metals, and minerals into a concentrated slurry for reuse, or disposal.

Our MFVS has proven to vaporize up to 90% of the incoming solution, all the while simultaneously destroying HAPs, VOCs, and BEYX chemicals within the process. All of our process is at atmospheric pressures without the use of boilers or the problems they present. Our thermal units utilize natural gas, CNG, LNG, or propane. A source will need to be procured for testing. We also will utilize 480V 3-phase electrical power as provided at BGNDFR.

We have successfully obtained full Wyoming DEQ permitting for operation, and still have full unlimited permitting to run there. We ran (3) units in Wyoming, and into Utah for approx. (2) years very successfully with an average throughput of 500 barrels per day, per unit, with a 400 bbls per day net reduction (depending on water quality). We basically turned excess production water into harmless clouds.

We then ran for 6-9 months with all (3) units in the South Texas gas fields. We have ran our units in National Forests, BOM and range grasslands without incident. Previous operations have been for releasing all cleaned vapor back into the atmosphere only.

Application Date: 7-10-2024 Pilot Date: 8-14-2024 to or beyond 12-14-2024 Type and scale of Project: Full scale Project Funding: TBD, but all previously private self funded

Project Collaborators: (if any)

Group/Company	Role	Contact Info	
Strongbox Water Solutions LLC	Principle	Tony D. Haag 3177781335	
BGNDRF	Director	Malynda Cappelle	

2. Project Site Location and Description:



- BGNDFR
- Location: Alamogordo, New Mexico
- General Directions: N/A
- Site Description: BGNDFR
- Land Status: N/A
- Arial view of site: N/A
- **Produced Water Source and Quality**: Any and all water applicable up to 60-80,000 TDS

3. Executive Summary:

Previously, we have always been asked to only eliminate as much water volume as possible to reduce trucking and disposal costs. These BGNDRF tests are to determine the amount of useable water we can collect from our clean vapor, less the heavy residuals, for reuse in land reclamation, irrigation, livestock, reintroduction into natural tributaries, or further polishing as required/requested.

We also plan to have the capability to completely capture/destroy all PFAS contaminants by years end. The BGNDRF facility is perfectly suited for us to determine the extent of our collection for reuse on various water types and various applications.

4. Proposed Reuse Application of Treated Water: (following statement is required)

For the purposes of this test, there will be no discharge of the produced water. The distillate will be collected in a holding tank for sampling before being blended back with the concentrated brine for reinjection into an approved SWD.

5. Similar or related permits/notification needed with other agencies, or nearby properties:

N/A or TBD

6. Pilot-System Process and Design:

Strongbox plans to bring our newest full scale/size MFVS SB-1 upgraded unit to the BGNDFR and set it up for our current typical operation/testing. We then plan to provide and incorporate a customized ETank collection/condensor tank system to set adjacent to our SB-1 unit. We plan to route all exhaust vapor into the ETank to recondense and collect for testing quality and quantity. We plan to bring/provide all hoses fittings and connections to utilize the designated incoming water from the BGNDFR feeder system. Our SB-1 unit will pump the heavy residual to wherever is needed for collection and testing.

Our units are made to run 24/7 for up to 30 days without interruption/maintenance, but for ease of testing, we would probably plan to just operate the SB-1 (8) hours per day normally, with one operator. Our units have a full array of automated safety features, as well as internal air sensors, temperature sensors, flow sensors, and full spill containment. All units can and are set-up to run



remotely, hence the WIFI connection requirement. They have full PLC touch screen panel controls on-site.

7. Project Goals and Objectives: (Summary of objectives and KPI's similar to below)

The pilot project is expected to operate for up '20' weeks, treating up to '500' bbls/day of produced water of a water quality compatible with reuse for 'z' (i.e agricultural irrigation). It is expected the concentrate and distillate will have the following beginning and final qualities.

Parameter	Feed Water	Brine	Clean Distillate
TDS, mg/L	30,000	180,000	4,000 or less
pH	e	f	g
Water Volume	Up to500 bbls/24 hrs	Up to 100 bbls/24 hours	400 bbls/24 hour day
Ammonia, mg/L	Х	у	Z

Additionally, (i.e.solids and ammonia recovery will be evaluated for economic reuse of those recovered minerals). The following Key Performance Indicators (KPI's) will be evaluated to assess system and process cost effectiveness and overall performance:

Operational throughput - x bbls/hr Operational efficiency - x average hrs/day Downtime - x average hrs/wk Meet water quality target - x % of time Max. water quality variation - x average % above target level Energy use/cost per bbl treated - x kwh/bbl, x btu/bbl, and \$x/bbl Treatment vs pre and post treatment costs of operation - y in % Distillate and concentrate revovery - xaverage bbls/bbls treated Mineral recovery - x tons per day per bbls treated (Additional KPI's as required)

The data collected will be utilized to help develop the design of larger-scale treatment systems to support enhanced operations efficiencies and reduce full-scale treatment costs.

8. Summary of Risk and Toxicology Sampling, Testing, and Analysis: (Following Statement Required)

Example - The KPI's noted above will be measured daily on-site with simple field testing systems and monitors.

Example - Risk and Toxicology testing and analysis of the treated produced water will be coordinated and managed through the NMPWRC. Samples will be taken and tested using the Consortium's sampling protocol, and their Risk and Toxicology testing protocol. Bechtel will coordinate with the NMPWRC so they can to collect and prepare Risk and Toxicology analysis samples to ensure proper care, custody, and control. The Consortium will collect up to two set of samples once routine operations have been established to provide information on



process efficacy and reliability relative to potential future treated water safety.

9. Equipment Vendor and Associated Suppliers: Strongbox Water Solutions

Equipment or Vendor Name/Description	Role
N/A at this time	

10. Expected Produced Water Users: TBD

The effluent for the pilot operations will be recombined and placed in an SWD and residuals disposed as noted below.

- 11. Disposal and Decommissioning: (Required information) Example given below Equipment: None Reuse for testing at other sites
 Material: Secondary containment and expendables for the treatment system will be......
 Water: All water will be disposed by SWD injection
 Soil: Any contaminated soil will be disposed at the following permitted
- 12. Expected Operational Testing, Reporting, and Proposed Review Schedule Pilot mobilization, set up, and shakedown: x-y 2023 Pilot Operations: x-y 2023 Draft Report: z 2023

Tony D. Haag

7/10/24

Date

Company POC