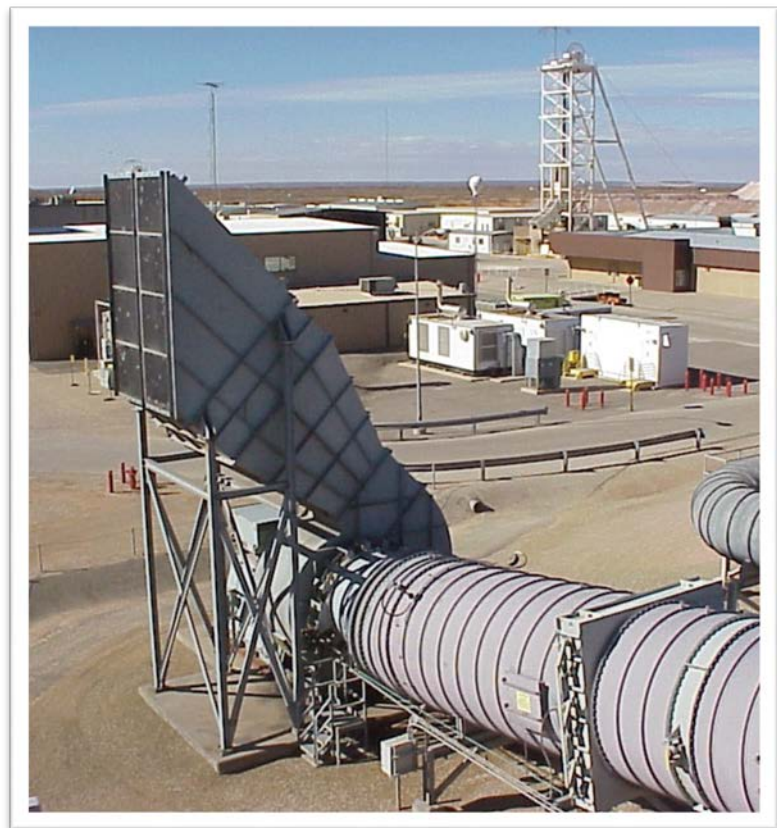


# **Waste Isolation Pilot Plant Restart of 700-C Fan**

**December 2020**

**Presented by: Office of Environmental Management**

# 700-C Ventilation Fan Start Up



To provide much needed increased airflow to the WIPP underground, WIPP plans to restart one of its legacy exhaust fans, the 700-C fan (pictured)

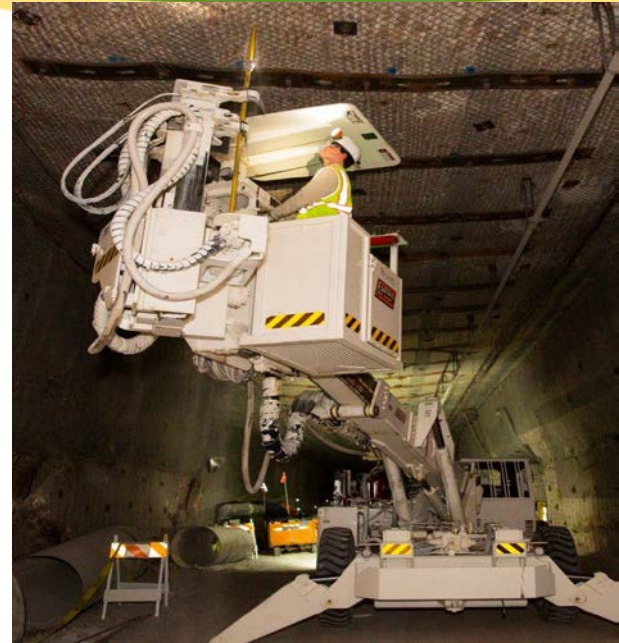
The fan will exhaust unfiltered air from the WIPP underground.

Portions of the underground which have very low levels of contamination will be ventilated by the fan directly to atmosphere.

WIPP has conducted thorough investigations to ensure any radiological release caused by operating the fan will be well below regulatory guidelines and poses no threat to the workforce, the public or the environment.

Initial testing of the fan is expected to be conducted in the later part of this year.

- Increases airflow for mining & ground control activities, and improves overall operational efficiencies.
- Improves worker health and safety.
  - Improves overall air quality by exhausting diesel emissions more efficiently
  - Allows WIPP to meet compliance with the new more restrictive air quality standards
  - Reduces potential for heat stress by more effectively removing heat produced by the operating equipment in the underground



- The 700-C fan has an unfiltered airflow capacity of up to 240,000 cfm to the underground.
- This is an increase of 94,000 cfm over the existing ventilation systems.
- As a precaution, to minimize the possibility of contamination releases while unfiltered ventilation is in progress, no waste emplacement will occur with 700-C in operation.
- Should it be necessary, a shift to filtered ventilation will be able to be conducted in a timely manner to prevent contamination releases.



# 700-C Fan Project Plan Steps

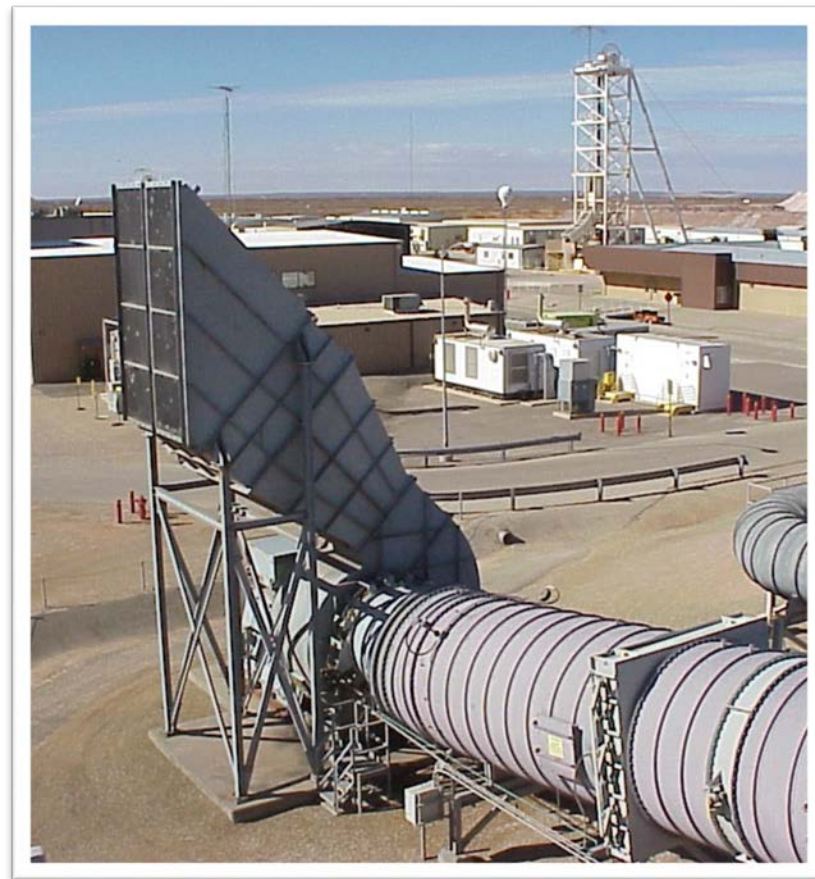
- Analyze potential for radiological emissions from the 700-C fan. Have analysis validated by the Consortium for Risk Evaluation with Stakeholder Participation (CRESP).
- Run a 4 hour test to validate the expected emissions. Communications with stakeholders to be conducted prior to the test.
- Evaluate the new emissions data from the 4 hour test and verify acceptability for trace emissions during operations.
- Conduct a 5 day run where mine flow balancing will occur.
- Initiate startup of the 700-C fan for routine operations during non-waste handling activities.
- Complete. Report provided by CRESP who concluded WIPPs strategy to be reasonable
- Scheduled for late 2020
- Scheduled to occur immediately after the 4 hour test.
- Scheduled after acceptable results from the 4 hour test
- Scheduled for early 2021

- During the initial start-up of the 700-C fan, DOE will conduct the operation as if a brief radiological release is expected.
- This release has been analyzed to be very small (as much as 2000 times less than EPA regulatory limits).
- Nuclear Waste Partnership has developed an extensive Radiological Monitoring Plan (RMP) that will be adhered to during the initial start-up of the 700-C fan.
- The plan includes limiting personnel on site, deploying instrumentation to monitor real-time and accumulated releases, abort criteria to stop the test if releases are higher than expected, and a hold on further fan operations until data can be analyzed to validate expected emissions.



# 700-C Fan Restart Project Status

- All physical repairs to the fan system are complete.
- Current 700-C fan restart is expected, when approved, to perform the first stage of testing and balancing in later part of the year.
- Normal 700 fan operations are expected to begin in early 2021.
- This will require DOE/CBFO approval, as this stage implements required changes to the existing DSA/TSRs and starts the 700-C fan.



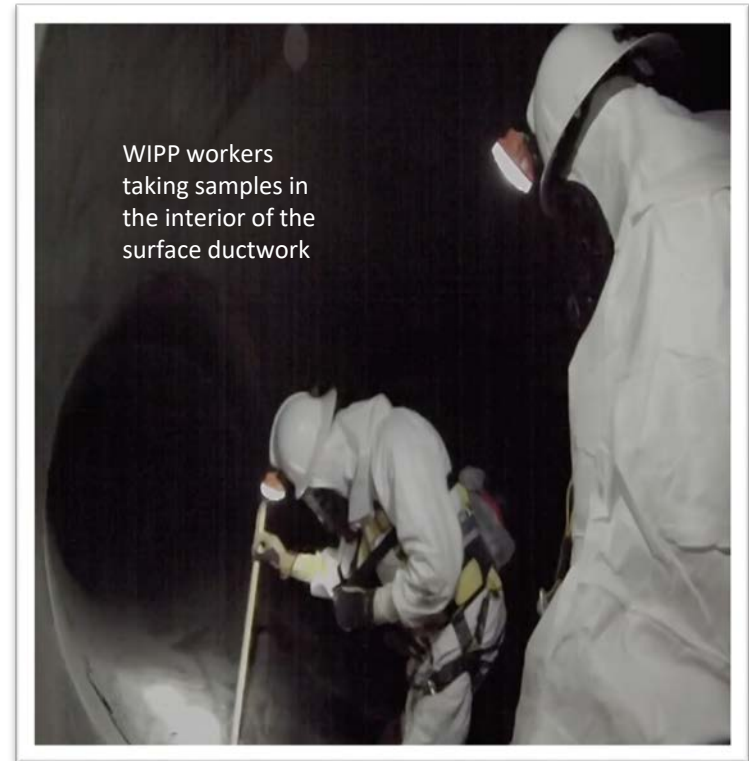
# Contamination release risk

As stated earlier, WIPP will perform an initial 4 hour Hot Test of the 700-C fan with a robust suite of radiological monitoring to collect actual emissions data and to detect and stop a higher than expected release.

As calculated from the conservative estimates, the maximum potential release from resuspension of contaminants in the ductwork and on the salt piles would be the equivalent to a dose of 0.005 mrem to the Maximumly Exposed Off-Site worker.

Comparing these estimates to corresponding regulatory release limits, this is less than 0.05% of the allowable 10 mrem/year EPA regulatory limit.

In terms of airborne activity, the worst case calculated scenario predicts an airborne release equivalent to 0.04 Derived Air Concentration (DAC) during the 4 hour run. 10CFR835 defines an airborne radioactivity area as an area which measures emissions at 0.3 DAC. Again, predicted release rates are nearly 10 times lower than the point at which respiratory protection would be required.





# Support For Starting the 700-C fan

- The WIPP workforce is strongly in approval of restarting the 700 fan. The local union has provided a letter of endorsement for starting the fan to the DOE.
- The local DOE office supports providing more airflow to the WIPP underground and endorses the analysis which indicate it can be done safely.
- The local community is very favorable to WIPP. Ongoing communications have been conducted via normally scheduled meetings and the local community continues to support any steps which will improve both safety and efficiency at WIPP.
- The CRESP Team has endorsed WIPP's rationale and approach to restarting the 700-C Fan
- The MSHA has long been in favor of providing more airflow to the WIPP underground, a viewpoint they articulated in recommendations they provided to WIPP after a technical assist visit in 2016.

