Exhibit 2

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY LICENSING BOARD

IN THE MATTER OF HOLTEC INTERNATIONAL (Consolidated Interim Storage Facility)	Docket No. 72-1051 May 11, 2020

FACTS PETITIONERS INTEND TO RELY ON TO SUPPORT NEW AND AMENDED CONTENTIONS

Holtec International ("Holtec") Draft Environmental Impact Statement ("DEIS")

- "There is one active oil/gas well on the southwest portion of Section 13 that operates at minimum production to maintain mineral rights."[1]
- "The proposed CISF will have no impact on oil and gas exploration and development in the proposed project area because extraction will continue to occur at depths greater than 930 m [3,050 ft]."[2]
- "All oil and gas production horizons in Eddy and Lea Counties, New Mexico, are older (and therefore deeper) than the Salado Formation (Cheeseman, 1978)."
- "Oil and gas exploration targets within and surrounding the proposed project area range from relatively shallow oil and gas at approximately 930 to 1,524 m [3,050 to 5,000 ft] in upper and middle Permian formations (EIS Section 3.4.1.2) to deep gas targets in middle Paleozoic formations in excess of 4,877 m [16,000 ft] deep (ELEA, 2007)."[3]
- The no-longer-proposed Green Frog Café drill island would have been located just outside the eastern boundary of the proposed project area (Holtec, 2017, 2019c).[4]
- Man-made structures currently located on the land surrounding the proposed CISF project area include . . . a producing well located near the communications tower. . . an abandoned oil recovery facility (including tanks and associated hardware) in the northeast corner, and another oil recovery facility (including tanks and associated hardware) in the far southeast corner (Holtec, 2019a).[5]

[1] Holtec DEIS at 3-7.
[2] Holtec DEIS at xxiv-xxv.
[3] Holtec DEIS at 3-7 to 3-8.
[4] Holtec DEIS at 3-7 to 3-8.
[5] Holtec DEIS at 3-74.

- One operating gas well is present within the proposed project area along with numerous plugged and abandoned wells (Holtec, 2019a,b). None of these oil and gas wells are located within the 133.5-ha [330-ac] storage and operation area or where any land would be disturbed by construction activities. Therefore, construction of the proposed CISF would not have an effect on oil and gas operations within the proposed project area (Holtec, 2019a). In addition, Holtec has stated that it has no plans to use any of the plugged and abandoned wells (Holtec, 2019b). All of the plugged and abandoned wells are located in the eastern portion of the proposed project area. The closest plugged and abandoned well to the storage and operations area is approximately 0.65 km [0.4 mi] to the east.[6]
- As described in EIS Section 3.2.4, all oil and gas production zones in the area of the proposed CISF occur beneath the Salado Formation at depths greater than 914 m [3,000 ft] (Cheeseman, 1978; Holtec, 2019b).[7] Furthermore, oil and gas exploration targets within and surrounding the proposed project area range from relatively shallow oil and gas at approximately 930 to 1,524 m 46 [3,050 to 5,000 ft] in upper to middle Permian formations to deep gas targets in middle Paleozoic formations in excess of 4,877 m [16,000 ft] deep (ELEA, 2007). Future oil and gas development (e.g., drilling and fracking) beneath the proposed project area will likely continue to occur at depths greater than 930 m [3,050 ft].[8]
- As described in EIS Section 3.2.4, the Belco Tetris Shallow and Belco Deep drill islands are located approximately 0.4 km [0.25 mi] and 0.8 km [0.5 mi] west of the proposed project area, respectively, and the Anise Tetris drill island to the south of the proposed project area. These drill islands would be used for any future drilling and would ensure that construction and operation of the proposed CISF would not have an impact on oil and gas exploration activities.[9]
- As described in EIS Section 3.4.5, sinkholes and karst features formed in evaporite and gypsum 24 bedrock are common features of the lower Pecos region of west Texas and southeastern 25 New Mexico. A number of these features are of anthropogenic (man-made) origin and are 26 associated with improperly cased abandoned oil and water wells, or with solution mining of salt 27 beds in the shallow subsurface (Land, 2009, 2013). As described in EIS Section 4.2.1.1, 28 numerous plugged and abandoned oil and gas wells are present within the proposed project 29 area (Holtec, 2019a,b). However, none of these oil and gas wells are located within the 30 133.5-ha [330-ac] storage and operation area or where any land would be impacted by 31 construction and operation activities. Holtec has stated that it has no plans to use any of the 32 plugged and abandoned wells (Holtec, 2019b). In addition, the subsurface geologic conditions 33 at the proposed project area are not conducive to karst development or subsidence. .Therefore, because the subsurface geologic

[6] Holtec DEIS at 4-4.
[7] Holtec DEIS at 4-4.
[8] Holtec DEIS at 4-4 to 4-5.
[9] Holtec DEIS at 4-5.

conditions and because the proposed CISF project operations do not produce any liquid effluent that could facilitate dissolution of halite and gypsum, the NRC staff does not anticipate that the proposed CISF would lead to the development of sinkholes or subsidence. Information on regional subsidence is in EIS Section 5.4 [10]

- In addition, continued 4 oil and gas development in the geographic scope of the analysis may lead to the need for 5 additional support infrastructure such as compressor stations and pipelines to move oil and gas 6 to market. EIS Figures 3.2-6 and 3.2-9 show oil and gas support facilities and pipelines 7 surrounding the proposed CISF project area. As shown in EIS Figure 3.2-8, the majority of land 8 within the geographic scope of the analysis for land use {i.e., land within a 10-km [6-mi] radius 9 of the proposed CISF project} is within the known potash mining leasing area. As such, 10 administrative controls implemented by the New Mexico Oil Conservation Commission, the 11 New Mexico State Land Office, the State of New Mexico, U.S. Department of the Interior, and 12 BLM would ensure that oil and gas development activities and potash mining activities within 13 the geographic scope of the analysis for land use are closely monitored and regulated 14 (Holtec, 2019c).[11]
- The NRC staff assessed cumulative impacts on geology and soils within a geographic scope of analysis of 80 km [50 mi] to capture the large-scale nature of the geologic surface and subsurface formations in the region. The timeframe for the analysis of cumulative impacts is 2017 to 2060.[12]

<u>Holtec Safety Analysis Report ("SAR")</u>

- However, the Site has been associated with oil and gas exploration and development with at least 18 plugged and abandoned oil and gas wells located on the property. However, none of these plugged and abandoned oil and gas wells are located within the area where the ISFSI would be located or where any land would be disturbed and they are not expected to affect the construction and operation of the CIS Facility. The plugged wells are estimated to be 30-70 years old. It is possible that hydrocarbon contamination exists at the Site as a result of these past practices [1.0.4]. There are no active wells on the Site and there are no plans to use any of the plugged and abandoned wells on the Site.[13]
- Given that the nearest historic potash mine is approximately 2 miles away from the CIS Facility, subsidence effects at the CIS Facility Site from past or current potash mines would not be expected to occur. [14]
- Subsidence is the phenomenon or response that occurs when an underground opening is created. In the Delaware Basin, subsidence caused by human activities largely has occurred as a result of potash mining and activities involving the withdrawal or injection of fluids for oil and gas production and

[10] Holtec DEIS at 4-26.
[11] Holtec DEIS at 5-17 to 5-18.
[12] Holtec DEIS at 5-22.
[13] Holtec SAR at 2-3.
[14] Holtec SAR at 2-10.

brine extraction. Subsidence from mining creates voids that cause collapse of strata above the mining level. The overlying and surrounding rock or soil naturally deforms in an effort to arrive at a new and more stable overall equilibrium position. This equilibrium-seeking action can result in both vertical and horizontal ground movement, and, if not controlled or minimized, can cause damage to both surface and subsurface structures. It can result in the development of undesirable surface topography, such as surface cracking or collapse, sinkholes, blocking or changing stream channels, and modification of drainage pathways. The rate of subsidence is largely dependent on the type of material being mined and the amount of material mined [2.1.16]. The magnitude, rate of development, and surface expression of the subsidence process are controlled by several factors, most of which are interdependent. These include mining method, depth of extraction, size and configuration of openings, rate of advance or extraction, seam thickness, topography, lithology, structure, hydrology, in situ stresses, and rock strength and deformational properties. Taken collectively, they demonstrate the complexity of the subsidence process [2.1.22].[15]

- Oil and gas exploration targets range from relatively shallow oil and gas at 5,000 feet deep in the Delaware Canyon Formation to deep gas targets in middle Paleozoic formations in excess of 16,000 feet deep [2.1.16].[16]
- As previously stated in Section 2.6.4 of the SAR, with regard to potential future drilling on the Site, Holtec has an agreement with Intrepid Mining LLC (Intrepid) such that Holtec controls the mineral rights on the Site and Intrepid will not conduct any potash mining on the Site. Id at 2-10.
- The geologic settings of the Wink and Jal sinkholes are similar to that of the CIS Facility Site as they occurred at the basin margin above the Capitan Reef. In each incident, sinkholes formed around a well location and the sinks had diameters ranging from 200 to over 700 feet. Although the exact cause of development of these sinkholes is not known, it is suspected that casing failure allowed unsaturated water to come into contact with, and subsequently dissolve, salt layers [2.1.16]. Potash deposits are located around and within the Site as shown on Figure 2.1.21. With regard to potential future drilling on the Site, Holtec has an agreement [2.6.9] with Intrepid such that Holtec controls the mineral rights on the Site and Intrepid will not conduct any potash mining on the Site. An area for a potash mine nearby and west of the Site has been identified as shown on Figure 2.1.21; while the operational and construction footprint for the CIS Facility does not intersect the area for the potash mine (identified on Figure 2.1.21 as “Belco shallow” and “Belco deep” potash drill islands), the proposed railroad spur has the potential to cross these drill islands.[17]
- The Belco Shallow and Belco Deep drill islands are located approximately 0.25 and 0.5 miles, respectively, from the CIS Facility Site boundary, and are

[15] Holtec SAR at 2-9.
[16] Holtec SAR at 2-11.
[17] Holtec SAR at 2-12.

intended to accommodate multiple oil and gas well locations, all or most of which will be horizontal wells completed below the Bone Springs formation (7,800 feet below the ground surface). Oil and gas drilling has occurred on those drill islands in the past and could be used in the future. Similarly, as shown on Figure 2.1.20, oil and gas wells have been drilled in the Green Frog Café Drill Island located just east of the proposed CIS Facility [2.1.17][18]

- Additionally, any future oil drilling or fracking beneath the Site would occur at greater than 5,000 feet depth, which ensures there would be no subsidence concerns [2.1.8].[19]

Holtec Environmental Report ("ER")

- The facility components do not overlap active oil and gas wells. Holtec has worked with BLM to identify a rail spur pathway that does not impact potash mining operations.[20]
- However, none of these plugged and abandoned oil and gas wells are located within the area where the ISFSI would be located or where any land would be disturbed and they are not expected to affect the construction and operation of the CIS Facility. The plugged wells are estimated to be 30-70 years old. It is possible that hydrocarbon contamination exists at the Site as a result of these past practices (ELEA 2007, Appendix 2G). There are no active wells on the Site and there are no plans to use any of the plugged and abandoned wells on the Site.[21]
- A number of oil wells were drilled along the west flank of Laguna Gatuna beginning in the early 1940's. Most of the wells were abandoned by 1975 and well monuments were installed; several of the well monuments were identified during site reconnaissance. None of the monuments displayed evidence of tilting that might be associated with local earth movements (ELEA 2007, Section 2.3.4.2).[22]
- By agreement with the applicable third parties, the oil drilling and phosphate extraction activities have been proscribed at and around the site and would not affect the activities at the site.[23]

Outstanding RAIs

- RAI 2-3: ". . . contradictory statements in the SAR regarding the existence of a producing oil/gas well in the southwest portion of the proposed CISF site. . . SAR Section 2.1.2, 'Site Description,' and SAR Section 6.5.2(d), 'Potential Fire Hazards,' state '[t]here are no active wells on the site.'"[24]

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[18] Holtec SAR at 2-12.
[19] Holtec SAR at 2-112.
[20] Holtec ER at 4-6.
[21] Holtec ER at 4-2.
[22] Holtec ER at 3-19.
[23] Holtec ER at 2-19.
[24] "This information is necessary to determine compliance with 10 C.F.R. 72.24(a), 72.90(a) through (d), 72.94, and 72.98"

- RAI 2-5: "Clarify how the [existing] structures currently on the proposed site would be dealt with during construction and operation phases of the proposed facility in SAR Section 2.1.2, 'Site Description.'. . .[N]o information has been presented in the SAR as to what happens to. . . two oil recovery facilities and associated hardware, and [] a producing oil/gas well. . . The description should include detailed characteristics of the existing structures and assessments of potential hazards posed by them to the proposed facility if they would not be dismantled or, in the case of the producing oil/gas wells, abandoned and plugged."[25]
- RAI 2-8: "SAR Section 2.1.4, 'Land and Water Use,' states that multiple horizontal holes will be drilled to the Bone Spring formation from the Belco Shallow and Belco Deep drill islands. These drill islands are very close to the proposed site, approximately 400 m [1,320 ft] and 800 m [2,640 ft], respectively. Similarly, holes were drilled from the Green Frog Café drill island just east of the proposed site. The potential for subsidence due to corrosion of the casings of the abandoned drill holes is illustrated by the formation of the Wink and Jal sinkholes described in SAR Section 2.1.4. The hazards from potential land subsidence induced by casing failure, any future horizontal drilling beneath the site, or from oil/gas production from nearby wells should be evaluated and assessed to demonstrate that important to safety structures at the proposed facility and facility operations are not affected."[26]
- RAI 2-10: "Provide the status of activities associated with extraction of potash ore from the remnant pillars using the solution mining technique, as described in SAR Section 2.1.4, "Land and Water Use." Describe the mining process and the extraction ratio achieved, including the date of completion of the solution mining operations in nearby mines, and any additional surface subsidence resulting from solution mining activities. . .[I]nformation [regarding Intrepid Potash LLC] dates from 2012, and information on the current status of potash extraction using solution mining technology is not given. Any additional subsidence at the surface due to potash extraction from remnant pillars using solution mining technology is needed to assess the potential effects on the proposed storage facility."[27]
- RAI 2-11: ". . .SAR Section 2.1.4, states that the maximum surface subsidence observed in the southeastern New Mexico potash mines is nominally 4 ft for an average mining height of 6 ft using the room and pillar mining method. Use of the solution mining technique to extract the remnant pillars from the existing room and pillar mines would induce additional subsidence, as the support provided by these remnant pillars would be removed. As stated in SAR Section 2.1.4, Intrepid Potash LLC has been authorized to use the solution mining technique to extract additional potash ore from the remnant pillars, including

[25] "This information is necessary to determine compliance with 10 CFR 72.24(a), 72.90(a) through (d), 72.94, and 72.98."
[26] "This information is necessary to determine compliance with 10 CFR 72.24, 72.90(a) through (d), 72.94, and 72.98."
[27] "This information is necessary to determine compliance with 10 CFR 72.24(a), 72.90(a) through (d), 72.94, and 72.98."

mines where potash mining was suspended in the past. It is not clear from the SAR whether any of the nearby mines has used this technique to extract potash and the resulting additional surface subsidence. . .”[28]

- RAI 2-12: “Provide a rationale for why mining operations at nearby underground potash mines or extraction of oil and gas from underneath the CISF would not pose any hazard to the proposed facility from surface subsidence. Also, justify why mining of potash would not be feasible beneath or around the proposed CISF site for the proposed duration of the license. . . SAR Figure 2.1.17, citing a figure from the 2007 GNEP Siting Study (Reference 2.1.3 of the HI-STORE SAR), states that the nearest underground potash mine working is 3.2 km [2 mi] from the proposed site. Information on the distance of the nearest mine working from the proposed site dates from 2007. Therefore, information on any progress of the mine workings in the ensuing years should be described and the current location(s) as well as any projected future mine workings should be used and provided in assessing the potential subsidence hazards to the proposed site. Sections 2.1.4 and 2.6.4 of the SAR, “Stability of Subsurface Materials,” state that Intrepid will not conduct any potash mining on the site and cites an agreement between the applicant and Intrepid Potash LLC. The application should discuss the rationales for the conclusion that potash would not be extracted under and around the site during the licensed life of the project. Similarly, SAR Section 2.6.4 states that there would be no subsidence concerns from any future oil and gas extraction beneath the site. The application should also discuss the rationale for why future oil and gas extraction beneath the site would not present a subsidence concern.”[29]
- RAI 2-25: “. . . Justify the basis for the 5,000 ft minimum depth of oil drilling or fracking activities; clarify the depth to the shallowest oil or gas field in the site subsurface; and characterize the potential for surface deformation at the site due to drilling or fracking at the depth of the shallowest oil or gas field in the site subsurface. Discuss the potential for surface deformation due to mineral or resource mining exploration or extraction activities in the subsurface for the licensed life of the proposed facility. . . In addition, the application does not consider surface deformation from the exploration or extraction of minerals or other resources other than potash, oil, or gas.”[30]
- RAI 2-26: “Related to origin of potential dissolution features at the site Explain the origin of the features circled in red in Figures 2.1.2 and 2.1.5, particularly with respect to dissolution of the Capitan Reef or other subsurface carbonate and evaporite deposits either through natural process or human activities. Also, assess the future potential for similar surface deformation as a result of natural processes or human activities in the site area. Figure 2.6.2 of the SAR shows the site is underlain by over 1,000 feet of the Capitan Reef, a carbonate

[28] “This information is necessary to determine compliance with 10 CFR 72.24(a), 72.90(a)–(d), 72.94, and 72.98.”
[29] “This information is necessary to determine compliance with 10 CFR 72.24(a), 72.90(a) through (d), 72.94, and 72.98.”
[30] “This information is necessary to determine compliance with 10 CFR 72.98(c)(2) and 72.103(f)(2)(ii).”

formation in the site region that is well-known for the large-scale karst features that have developed at the surface and at depth. Most notable of these features is the Carlsbad Caverns, approximately 65 miles southwest of the site. The staff also notes the presence of additional carbonate and evaporite rocks both above and below the Capitan Reef and the association of subsurface halite dissolution above the Capitan Reef with several sinkhole features in southeastern New Mexico."[31]

- RAI 2-27: "Justify the conclusion that "dissolution of this unit [Mescalero caliche] may have resulted in the development of a number of small shallow depressions in the area; however, this is not regarded as an active or significant karst process at the Site." Specifically, provide a figure showing the location of these small shallow depressions relative to the site. Also, explain how it was determined that dissolution of the caliche layer and not dissolution of deeper layers resulted in the observed "small shallow depressions.". . ."[32]
- RAI 2-40: "RAI 2-40: Demonstrate that the Residual Soil beneath a spent fuel storage pad would not undergo settlement more than the maximum allowable of 0.2 inch, as per the HI-STORM UMAX Canister Storage System FSAR, considering the construction sequence and operational timeframes.. . . It is also not clear whether the long-term settlement of the SFP can be the only consolidation settlement component, as assumed in Report No. HI-2188143, as some components of the total load may be placed after significant time has elapsed since the SFP has been constructed. The soil below the SFP may undergo consolidation settlement from the load(s) already placed when a new load is placed on the SFP. Therefore, an assessment is necessary to determine whether the long-term settlement of the SFP would be comprised only of the consolidation settlement from the individual load components, or if it may include some of the immediate or elastic settlement from loads placed later in time. If that is not the case, an assessment is necessary to determine whether the SFP would be able to sustain the immediate or elastic settlement imposed by the subsequent load components, in addition to the consolidation settlement as the long-term settlement (less than 0.2 in as per HI-STORM UMAX FSAR)."[33]
- RAI 2-41: "Provide an assessment(s), using site-measured geotechnical properties, to demonstrate that the strata at the subgrade and under-grade of the storage pads and the CTF would have sufficient bearing capacity and would not undergo excessive differential settlement, both immediately and in the long-term, due to spatial and vertical variation of the subsurface geotechnical properties. In response to RAI 2-2, dated March 28, 2018, the applicant submitted Report No. HI-2188143, "HI-STORE Bearing Capacity and Settlement Calculations." However, the analysis in this report did not address the potential effects of spatial variation of the subsurface geotechnical properties on the bearing capacity and estimated settlement. The proposed

[31] "This information is necessary to determine compliance with 10 CFR 72.103(f)(2)(ii)."
[32] "This information is necessary to determine compliance with 10 CFR 72.103(f)(2)(ii)."
[33] "This information is necessary to determine compliance with 10 CFR 72.24(a), 72.103, and 72.122."

storage pads to be constructed at the HI-STORE CISF are large and spatial variations of the geotechnical properties may significantly affect the settlement of the Support Foundation Pads. Similarly, the borehole logs in GEI (2017) show significant variations with depth. However, Report No. HI2188143 assumed the materials underneath the storage pads to be vertically uniform. Therefore, a justification is necessary to demonstrate that the spatial and vertical variation of the geotechnical properties are small enough to affect the immediate or elastic as well as the consolidation settlement substantially."[34]

[34] "This information is necessary to determine compliance with 10 CFR 72.24(a), 72.103, and 72.122."