


Douglas A. Ducey
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Misael Cabrera
Director

Air Quality Field Inspection Report

Company Name: Energy Fuels Resources (USA) Inc.	Inspection Report No.: 354829
Place Name: Canyon Mine Place ID No.: 827	Inspector(s): Rob Verville
County: Yavapai	Arrival Date and Time: 8/13/2020 8:00 AM
Physical Location: Hwy 64 to FR 305, Tusayan, AZ 86023	Reason for Inspection:
Mailing Address: 850 E Hwy 89A, Fredonia, AZ 86022	<input checked="" type="checkbox"/> Complaint Complaint No.: 17073 <input type="checkbox"/> Routine Inspection <input type="checkbox"/> Partial Inspection
Coordinates (for new locations): Latitude: Deg.: Min.: Sec.: Longitude: Deg.: Min.: Sec.:	<input type="checkbox"/> Follow-Up Original Inspection Report No.:
Permit No.: 62877 Permit Expiration Date: 10/13/2021	Was Inspection Announced? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Onsite Contact Person(s)/Title(s): Mathew Germansen, Geologist Alvin Roberts, Electrician	Ops. Status: Standby Mode – no mining
	Type of Source: Class II, Underground Uranium Mine
Other Names: Energy Fuels Nuclear, Denison Mines	Last Inspection: 6/17/2020, Insp ID: 351040
Inspection Report Issued: Via email at facility	Facility Initial: ADEQ Initial: 
Results of Inspection: <input checked="" type="checkbox"/> No deficiencies were noted during the course of the inspection. No ADEQ action will result from this inspection. <input type="checkbox"/> Potential deficiencies were noted during the course of the inspection. Additional correspondence regarding this inspection may be forthcoming.	
Comments: The source is currently in standby mode with no mine development. GENERAL INFO – This Class II air quality control renewal permit is for the operation of an underground uranium mine located on the Coconino Plateau in Coconino County, Arizona approximately 6.5 miles southeast of Tusayan. CURRENT OPERATIONS ADEQ received a complaint the alleged “On July 20, 2020, a member of the public visited Canyon Mine and witnessed further animal burrows under the perimeter fence to the mine (the barrier between USFS land and the mine site/wastewater impoundment). At least one of the burrows was a re-entry point on a previously filled burrow. The citizen also reported water misting through the fence from the sprayers inside the wastewater impoundment.” COVID-19 Pandemic Inspection During the inspection, the ADEQ inspector practiced social distancing. To practice proper social distancing the ADEQ inspector is not going to spend extensive time in small areas with facility staff. During a virtual or paperwork inspection, the ADEQ inspector may choose to not enter the building or operators shack, to further reduce risks. The Notice of Inspection Rights (NOI) was presented and verbally acknowledged, as to practice proper social distancing and not touch the same computer equipment to sign the NOI.	

At the front gate, the ADEQ inspector pressed the entry button and the gate opened. The ADEQ inspector drove to the office. At the office, the ADEQ inspector met Mathew Germansen, Geologist and Alvin Roberts, Electrician. The Notice of Inspection Rights was present to and acknowledged by Mr. Germansen. An inspection inbriefing was discussed and then the ADEQ inspector, Mr. Germansen and Mr. Roberts went out and collected pictures from the evaporation pond and surrounding area.

Four APEX water evaporators were observed operating in the evaporation pond. Water mist is visible and it does not drift too far. The water drift was not observed escaping the pond edge. Currently the pond is low and the evaporators float with the water level. Mr. Germansen stated the pond is 6.5 feet deep, and currently the pond has approximately 1.5 foot of water. The pond water was green. Mr. Germansen stated the last algae treatment did not do much to kill the algae.

Mr. Germansen stated they had received July afternoon monsoon rains. The inspector observed weed growth around the property. Some areas had recently been mowed.

The ADEQ inspector also collected DOCS digital opacity pictures, but has been unable to upload the pictures for analysis during the inspection.

The ADEQ inspector walked the fence line during the inspection and twice around the west fenceline and did not feel moisture or the evaporative cooling effect when around the pond. The ADEQ inspector did not observe burrowing animal penetrations under the fence. A small area was observed and Mr. Germansen put some rocks in the area, to come back and add additional material. Mr. Germansen pointed out several areas with material against the fence to fill holes.

The Landshark evaporators were changed out with two APEX evaporators in March 2019. Third APEX evaporator installed in December 2019, fourth installed April 2020.

Evaporator Information:

Manufacturer: Resource West

Model: APEX 2.0

Air Velocity: Unknown

Flow Rate: 67gpm (60-100psi)

5 horsepower fan motor, Fan blade diameter: unknown

The water is heated to the evaporators to increase evaporation: the heated water temperature is season dependent; Approximately 70° F in coldest and 100° F in warmest.

Evaporators are using a manual shutoff system, not the automatic wind speed sensor. The evaporators are on a timer (6:30am – 6:30p, 7 days per week).

The evaporation pond has four Apex evaporators, the nearest evaporator to a fence line is 160 feet from the west fence.

Water evaporation calculation provided. Site diagram provided.

Exit Debrief:

Is Energy Fuels willing to keep the wind sensor for an option for an extra level of protection?

After the inspection, Mr. Germansen provided the local weather data:

Temp: 80°F Humidity: 20%, Wind Speed: 3mph, Wind Direction: wsw

DOCS Digital Opacity Results

Evaporator 1 - 4.79% opacity. Opacity observation of one water evaporator operating. Reading at lip of pond.

Evap Pond - 4.17% opacity. Opacity observation of four water evaporators operating. Reading at lip of pond.

Attachments: Notice of Inspection Rights, Photograph Log

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

NOTICE OF INSPECTION RIGHTS

FACILITY INFORMATION	ADEQ INFORMATION
Facility Name (Customer): Canyon Mine	Date of Inspection: 8/13/2020 8:00 AM
Facility Location (Place): Hwy 64 to FR 305, Tusayan, AZ 86023	County: Mohave
	Inspector: Rob Verville
Mailing Address: 850 E Hwy 89A, Fredonia, AZ 86022	Telephone: (602) 771-4111
	Accompanied by:
Responsible Party: Energy Fuels Resources (USA) Inc.	ADEQ Follow-up Contact: David Kim Air Compliance Unit
On-Site Representative: Matt Germansen	
Title: Geologist	Title: Manager
Telephone: 928-607-9651	
Email: mgermasen@energyfuels.com	Telephone: (602) 771-4365

The ADEQ representative(s) identified above were present at the above address on the above listed date and time. Upon entry to the premises, the ADEQ representative(s) met with me, presented photo identification indicating that they are ADEQ employees and explained:

☒ **That the purpose of the inspection is to determine:**

- ☐ Compliance with Title 49 of the Arizona Revised Statutes, Title 18 of the Arizona Administrative Code* and/or:

Arizona Revised Statutes: Title 49, Chapter 3

Arizona Administrative Code: Title 18, Chapter 2

Permit/Agreement Number: 62877

- ☐ Qualification for a license issued pursuant to:

Arizona Revised Statutes: Title 49, Chapter 3

Arizona Administrative Code: Title 18, Chapter 2

- ☐ That this inspection is conducted pursuant to the authority granted in Arizona Revised Statutes § 49-104(B)(8) and/or:

Arizona Revised Statutes: § 41-1009

Arizona Administrative Code: Title 18, Chapter 2

Permit/Agreement Number: 62877

☐ That the state shall not be barred by the statutes of limitations of actions, according to A.R.S. § 12-510, except as provided in A.R.S. § 12-529 concerning certain claims based on navigability of watercourses. According to 28 U.S.C. § 2462, the U.S. government must commence an action within 5 years after the date the claim first accrued.

- ☐ Possible applicability of Small Business Bill of Rights pursuant to Arizona Revised Statutes § 41-1001(21)

That the fee for this inspection is: No fee for the inspection

*The Arizona Revised Statutes (A.R.S.) can be found on the internet: www.azleg.state.az.us/ArizonaRevisedStatutes.asp while the Arizona Administrative Code (A.A.C.) can be found at www.azsosaz.gov/public_services/Table_of_Contents.htm

While I have the right to refuse to sign this form, the ADEQ representatives may still proceed with the inspection

- ☒ I have read this notice and discussed any questions or concerns with the ADEQ representatives and I have received the Small Business Bill of Rights

Verbally acknowledged by Mr. Germansen

8/13/2020

Signature of Regulated Person or Authorized On-Site Representative

- ☐ The regulated person or authorized on-site representative refused to sign.

Name of Regulated Person or Authorized On-Site Representative

Title

- ☐ The regulated person or an authorized on-site representative was not present at the facility.

Signature of ADEQ Representative

8/13/2020

INSPECTION RIGHTS

- ☒ I understand that I can accompany the ADEQ representative(s) on the premises, except during confidential interviews.
- ☒ I understand that I have right to, on request:
- Copies of any original documents taken during the inspection, and that ADEQ will provide copies of those documents at ADEQ's expense;
 - A split of any samples taken during the inspection, if the split of the samples would not prohibit an analysis from being conducted or render an analysis inconclusive;
 - Copies of any analysis performed on samples taken during the inspection and that ADEQ would provide copies of this analysis at ADEQ's expense;
 - Copies of any documents to be relied on to determine compliance with licensure or regulatory requirements if the agency is otherwise permitted by law to do so.
- ☒ I also understand that:
- Each person who is interviewed by an ADEQ inspector during the inspection must be informed that:
 - participation in an interview is voluntary, unless legally compelled to participate;
 - they have the right to have an attorney or other experts in their field present during the interview to represent or advise the regulated person;
 - the ADEQ inspector may not take any adverse action or treat less favorably or draw any inference as a result of the regulated person's decision to be represented by an attorney or advised by any other experts in their field;
 - statements made by the person may be included in the inspection report; and
 - they have the right to 24 hours to review and revise any written witness statement drafted by the ADEQ inspector on which the ADEQ inspector requests that person's signature.
 - If the information and documents provided to the ADEQ inspector become a public record, trade secrets and proprietary and confidential information may be redacted, unless the information and documents are not confidential pursuant to statute.
 - Each person interviewed during the inspection must be informed that statements made by the person may be included in the inspection report;
 - Each person whose conversation is tape recorded during the inspection must be informed that the conversation is being tape recorded;
 - If an administrative order is issued or a permit decision is made based on the results of the inspection, I have the right to appeal that administrative order or permit decision. I understand that my administrative hearing rights are set forth in Arizona Revised Statutes § 41-1092 et seq. and my rights relating to an appeal of a final agency decision are found in Arizona Revised Statutes § 12-901 et seq;
 - If I have any questions or concerns about this inspection, I may contact the person listed as the ADEQ Follow-up Contact on the front of this form; ADEQ's Ombudsman at (602) 771-4322 (toll free inside Arizona at (800) 234-5677, extension, 771-4322); or the Arizona Ombudsman-Citizens' Aid office at (602) 277-7292 (toll free at (800) 872-2879);

If I have any questions concerning my rights to appeal an administrative order or permit decision, I may contact ADEQ's Office of Administrative Counsel at (602) 771-2212 (toll free inside Arizona at (800) 234-5677, extension 771-2212).

41-1001.01. Regulatory bill of rights; small businesses

A. To ensure fair and open regulation by state agencies, a person:

1. Is eligible for reimbursement of fees and other expenses if the person prevails by adjudication on the merits against an agency in a court proceeding regarding an agency decision as provided in section 12-348.
2. Is eligible for reimbursement of the person's costs and fees if the person prevails against any agency in an administrative hearing as provided in section 41-1007.
3. Is entitled to have an agency not charge the person a fee unless the fee for the specific activity is expressly authorized as provided in section 41-1008.
4. Is entitled to receive the information and notice regarding inspections and audits prescribed in section 41-1009.
5. May review the full text or summary of all rulemaking activity, the summary of substantive policy statements and the full text of executive orders in the register as provided in article 2 of this chapter.
6. May participate in the rulemaking process as provided in articles 3, 4, 4.1 and 5 of this chapter, including:
 - (a) Providing written comments or testimony on proposed rules to an agency as provided in section 41-1023 and having the agency adequately address those comments as provided in section 41-1052, subsection D, including comments or testimony concerning the information contained in the economic, small business and consumer impact statement.
 - (b) Filing an early review petition with the governor's regulatory review council as provided in article 5 of this chapter.
 - (c) Providing written comments or testimony on rules to the governor's regulatory review council during the mandatory sixty-day comment period as provided in article 5 of this chapter.
7. Is entitled to have an agency not base a licensing decision in whole or in part on licensing conditions or requirements that are not specifically authorized by statute, rule or state tribal gaming compact as provided in section 41-1030, subsection B.
8. Is entitled to have an agency not make a rule under a specific grant of rulemaking authority that exceeds the subject matter areas listed in the specific statute or not make a rule under a general grant of rulemaking authority to supplement a more specific grant of rulemaking authority as provided in section 41-1030, subsection C.
9. May allege that an existing agency practice or substantive policy statement constitutes a rule and have that agency practice or substantive policy statement declared void because the practice or substantive policy statement constitutes a rule as provided in section 41-1033.
10. May file a complaint with the administrative rules oversight committee concerning:
 - (a) A rule's, practice's or substantive policy statement's lack of conformity with statute or legislative intent as provided in section 41-1047.
 - (b) An existing statute, rule, practice alleged to constitute a rule or substantive policy statement that is alleged to be duplicative or onerous as provided in section 41-1048.
11. May have the person's administrative hearing on contested cases and appealable agency actions heard by an independent administrative law judge as provided in articles 6 and 10 of this chapter.
12. May have administrative hearings governed by uniform administrative appeal procedures as provided in articles 6 and 10 of this chapter and may appeal a final administrative decision by filing a notice of appeal pursuant to title 12, chapter 7, article 6.
13. May have an agency approve or deny the person's license application within a predetermined period of time as provided in article 7.1 of this chapter.
14. Is entitled to receive written notice from an agency on denial of a license application:
 - (a) That justifies the denial with references to the statutes or rules on which the denial is based as provided in section 41-1076.
 - (b) That explains the applicant's right to appeal the denial as provided in section 41-1076.
15. Is entitled to receive information regarding the license application process before or at the time the person obtains an application for a license as provided in sections 41-1001.02 and 41-1079.
16. May receive public notice and participate in the adoption or amendment of agreements to delegate agency functions, powers or duties to political subdivisions as provided in section 41-1026.01 and article 8 of this chapter.
17. May inspect all rules and substantive policy statements of an agency, including a directory of documents, in the office of the agency director as provided in section 41-1091.
18. May file a complaint with the office of the ombudsman-citizens aide to investigate administrative acts of agencies as provided in chapter 8, article 5 of this title.
19. Unless specifically authorized by statute, may expect state agencies to avoid duplication of other laws that do not enhance regulatory clarity and to avoid dual permitting to the extent practicable as prescribed in section 41-1002.
20. May have the person's administrative hearing on contested cases pursuant to title 23, chapter 2 or 4 heard by an independent administrative law judge as prescribed by title 23, chapter 2 or 4.

B. The enumeration of the rights listed in subsection A of this section does not grant any additional rights that are not prescribed in the sections referenced in subsection A of this section.

C. Each state agency that conducts audits, inspections or other regulatory enforcement actions pursuant to section 41-1009 shall create and clearly post on the agency's website a small business bill of rights. The agency shall create the small business bill of rights by selecting the applicable rights prescribed in this section and section 41-1009 and any other agency-specific statutes and rules. At the request of an authorized on-site representative of the regulated small business, the agency shall provide a written document of the small business bill of rights. In addition to the rights listed in this section and section 41-1009, the agency notice of the small business bill of rights shall include the process by which a small business may file a complaint with the agency employees who are designated to assist members of the public or regulated community pursuant to section 41-1006. The notice must provide the contact information of the agency's designated employees. The agency notice must also state that if the regulated person has already made a reasonable effort with the agency to resolve the problem and still has not been successful, the regulated person may contact the office of ombudsman-citizens aide.

Air Quality Field Inspection Photograph Log


Site Location: Canyon Mine - Hwy 64 to FR 305, Tusayan, AZ 86023		Photographer: Rob Verville	Camera: Hp XP Elite
Weather: overcast			
Photo No. 1	Date: 8/13/2020		
Direction Photo Taken: West			
Photo Description: Four evaporators operating in evaporation pond. Photo taken from east side of pond looking west. Mist is visible. Pond edge sprinklers water is visible.			


Photo No. 2	Date: 8/13/2020	
Direction Photo Taken: North		
Photo Description: Photo from south side of evaporation pond looking north. Nearest evaporator to fenceline is 160 to west fence.		

Photo No. 3	Date: 8/13/2020
Direction Photo Taken: West	
Photo Description: The evaporation pond is ringed with landscape type sprinklers that spray water onto the pond liner.	




Photo No. 4	Date: 8/13/2020
Direction Photo Taken: East	
Photo Description: From southwest fence corner looking east along fence.	


A photograph showing a chain-link fence with multiple strands of barbed wire on top, running along a dirt path. The path is flanked by tall, dry grass and green shrubs. In the background, there are tall pine trees and a small building.

Photo No. 5	Date: 8/13/2020	
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Direction Photo Taken: North	
Photo Description: From southwest corner looking north along fence.	


Photo No. 6	Date: 8/13/2020	
Direction Photo Taken: West		
Photo Description: From USGS weather station area (NW pond corner) looking north along fence.		

Photo No.
7

Date:
8/13/2020

Direction Photo Taken:
Down

Photo Description:
Water evaporation calculations. Previously provided to ADEQ.

Table 2.1
Annual Water Balance Design Summary (gallons)
Canyon Mine, Arizona

Source	August	September	October	November	December	January	February	March	April	May	June	July	Annual Quantity
Mine sump discharge	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	10,800,000
APEX evaporation (full time calculation)	-1,316,440	-803,239	-664,577	-360,968	-333,322	-356,159	-360,106	-745,942	-828,662	-1,334,622	-1,384,832	-1,338,881	-9,827,750
Site Runoff	55,912	9,665	55,912	41,912	27,674	35,590	30,180	17,247	16,000	12,807	35,463	62,769	401,133
Dust control volume	-150,000	-150,000	-150,000	-100,000	-50,000	-32,000	-32,000	-75,000	-150,000	-250,000	-300,000	-250,000	-1,689,000
Evaporation from pond and tanks	-188,151	-326,852	-161,307	-83,623	-33,677	11,063	9,843	-126,166	-292,170	-298,420	-445,278	-349,139	-2,284,077
Direct precipitation to pond and tanks	67,158	11,610	67,158	42,690	73,408	70,803	62,994	59,349	47,375	30,195	30,716	67,158	630,612
Water in storage at end of month ^{1,2}	250,000	250,000	250,000	250,000	673,200	1,878,171	2,489,083	2,493,354	2,129,883	1,124,585	250,000	250,000	
													net annual balance ¹
													-1,969,082

Notes:
1. APEX output reduced to maintain 250,000 gallon operational level in dry months.
2. Based on full time operation of APEX system, negative number reflects excess evaporation capacity.
3. Calculations based on a starting volume in storage of 650,000 gallons on August 1.

Photo No.
8

Date:
8/13/2020

Direction Photo Taken:
Down

Photo Description:
Overall site diagram.

Provided to ADEQ in SWPPP.

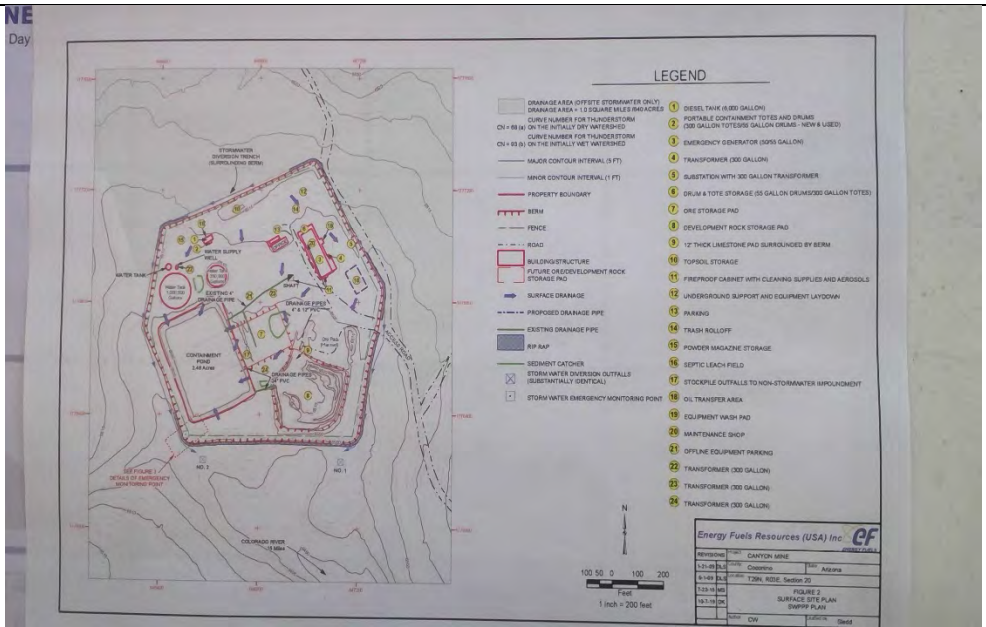


Photo No. 9	Date: 8/13/2020
Direction Photo Taken: West	
Photo Description: From NE corner looking west.	




Photo No. 10	Date: 8/13/2020
Direction Photo Taken: South	
Photo Description: From NE corner looking south towards front gate.	


A photograph showing a security perimeter. In the foreground, a chain-link fence runs diagonally from the bottom left towards the center. The fence is topped with several strands of barbed wire. The ground is covered with dry, brownish grass and some green shrubs. In the background, there are several green metal storage containers or trailers. A yellow tarp is visible near one of the containers. A line of trees is visible in the far background under a cloudy sky.

Photo No. 11	Date: 8/13/2020
Direction Photo Taken: Southeast	
Photo Description: Four Apex water evaporators operating. Mist visible on top of water. The mist is not drifting outside the pond.	





Photo No. 12	Date: 8/13/2020	
Direction Photo Taken: Northeast		
Photo Description: Sprinklers spraying back into evaporation pond. Spraying onto sloped pond liner.		

Photo No. 13	Date: 8/13/2020	
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Direction Photo Taken: West	
Photo Description: From SE corner looking west.	

Photo No. 14	Date: 8/13/2020
Direction Photo Taken: Northeast	
Photo Description: From SE corner looking north towards front gate.	


A photograph showing a large, rusted metal barrel lying on its side in a grassy field. In the foreground, there is a chain-link fence supported by wooden posts. To the left, there is a small green building and a pile of red dirt. The background features a line of trees under a blue sky with scattered clouds.

Photo No. 15	Date: 8/13/2020	
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Direction Photo Taken:

Southwest

Photo Description:

From front gate looking southwest.

**Photo No.**
16**Date:**
8/13/2020**Direction Photo Taken:**

Northeast

Photo Description:

From front gate looking north.



Photo No. 17	Date: 8/13/2020
Direction Photo Taken: South	
Photo Description: Possible animal spot under fence.	



A photograph showing a dry, arid landscape. In the foreground, there is a mix of dry, yellowish-brown grass and small, brown pine cones scattered on the ground. A chain-link fence runs diagonally across the middle ground. Behind the fence, the terrain is a reddish-brown soil with sparse green and yellow vegetation. A large, light-colored rock is visible near the fence line. The background shows more dense, dry brush and trees under a clear sky.

Photo No. 18	Date: 8/13/2020	
Direction Photo Taken: South		
Photo Description: Mr. Germansen placed rocks to mark the spot and he will add more.		