

Oregon Radioactive Waste Disposal Regulations

SB 246

Maxwell Woods
Assistant Director
Nuclear Safety and
Emergency Preparedness

Jeff Burrigh
Radioactive Waste
Remediation Specialist

February 4, 2021

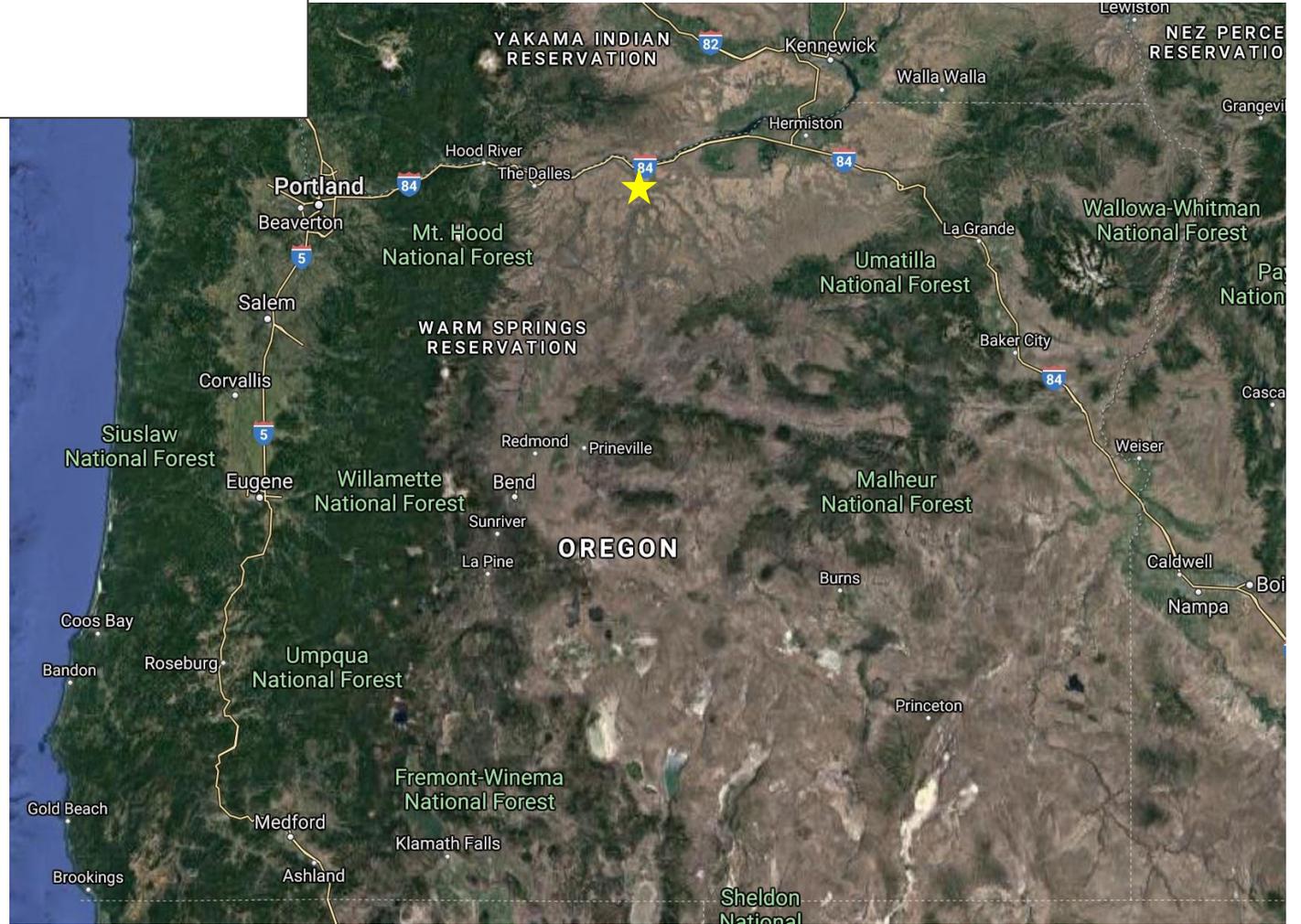


Oregon landfill took 2M pounds of radioactive fracking waste

Authorities say a chemical waste landfill in Oregon near the Columbia River has been accepting hundreds of tons of radioactive fracking waste from North Dakota in violation of Oregon regulations

By **The Associated Press**

February 14, 2020, 9:33 AM • 3 min read



PURPOSE OF THE PROPOSED BILL

- Expand who may be held responsible for illegal radioactive waste disposal, to include not only a disposer, but anyone who arranges for or transports such waste for disposal.
- Enable the Energy Facility Siting Council, with support from ODOE, to update and clarify the definition of radioactive waste subject to the disposal ban (OAR 345 Division 50).
- Expand and clarify ODOE enforcement authority for radioactive waste disposal.
- Add authority to recoup costs to the agency when a violation occurs.

CURRENT DISPOSAL REGULATIONS

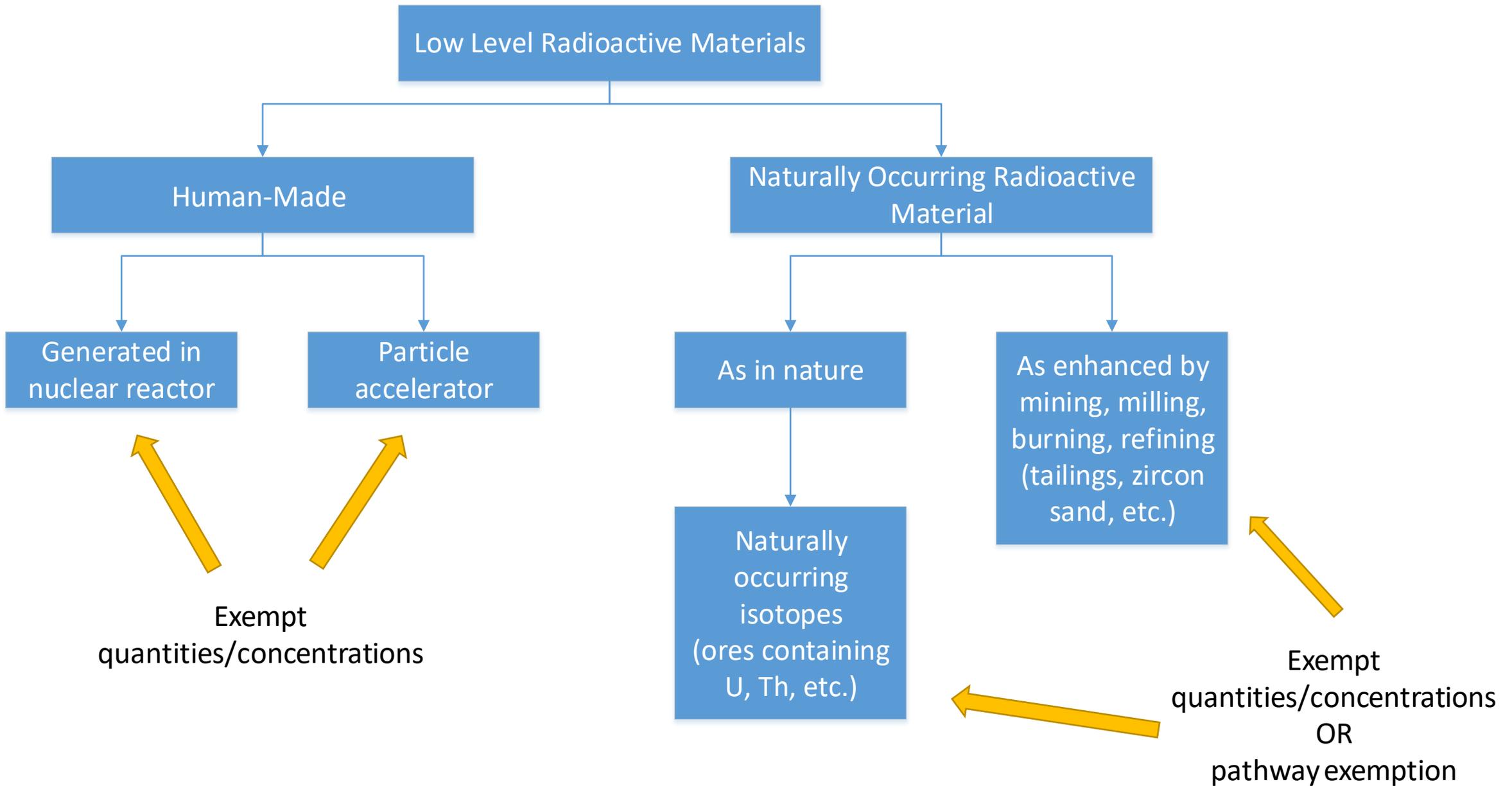
- ORS 469.525 (1977) prohibited radioactive waste disposal facilities in Oregon
- Because virtually everything contains some radioactivity, the Energy Facility Siting Council promulgated OAR 345-050 to define exempt wastes.
 - Exempt quantities
 - Exempt concentrations
 - Naturally Occurring Radioactive Material (NORM)

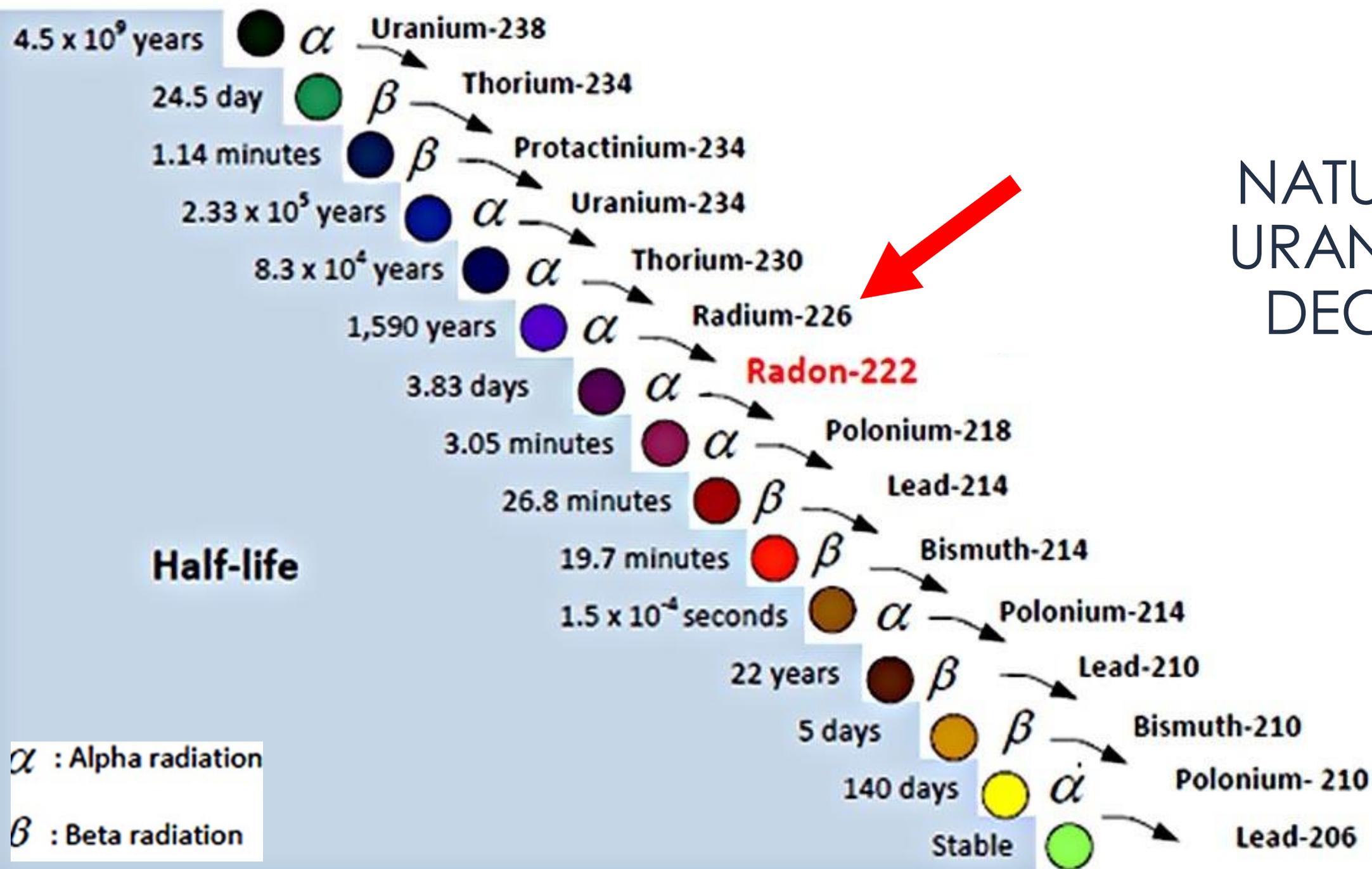
UNIQUE SITUATION: ADMINISTRATIVE RULE CITED IN STATUTE

(23)(a) “Radioactive waste” means all material which is discarded, unwanted or has no present lawful economic use, and contains mined or refined naturally occurring isotopes, accelerator produced isotopes and by-product material, source material or special nuclear material as those terms are defined in ORS 453.605. **The term does not include those radioactive materials identified in OAR 345-50-020, 345-50-025 and 345-50-035, adopted by the council on December 12, 1978, and revised periodically for the purpose of adding additional isotopes which are not referred to in OAR 345-50 as presenting no significant danger to the public health and safety.**

(b) Notwithstanding paragraph (a) of this subsection, “radioactive waste” does not include uranium mine overburden or uranium mill tailings, mill wastes or mill by-product materials as those terms are defined in Title 42, United States Code, section 2014, on June 25, 1979.

Restriction in statute allows only very limited updates to the rules defining what is not radioactive waste.





NATURAL URANIUM DECAY

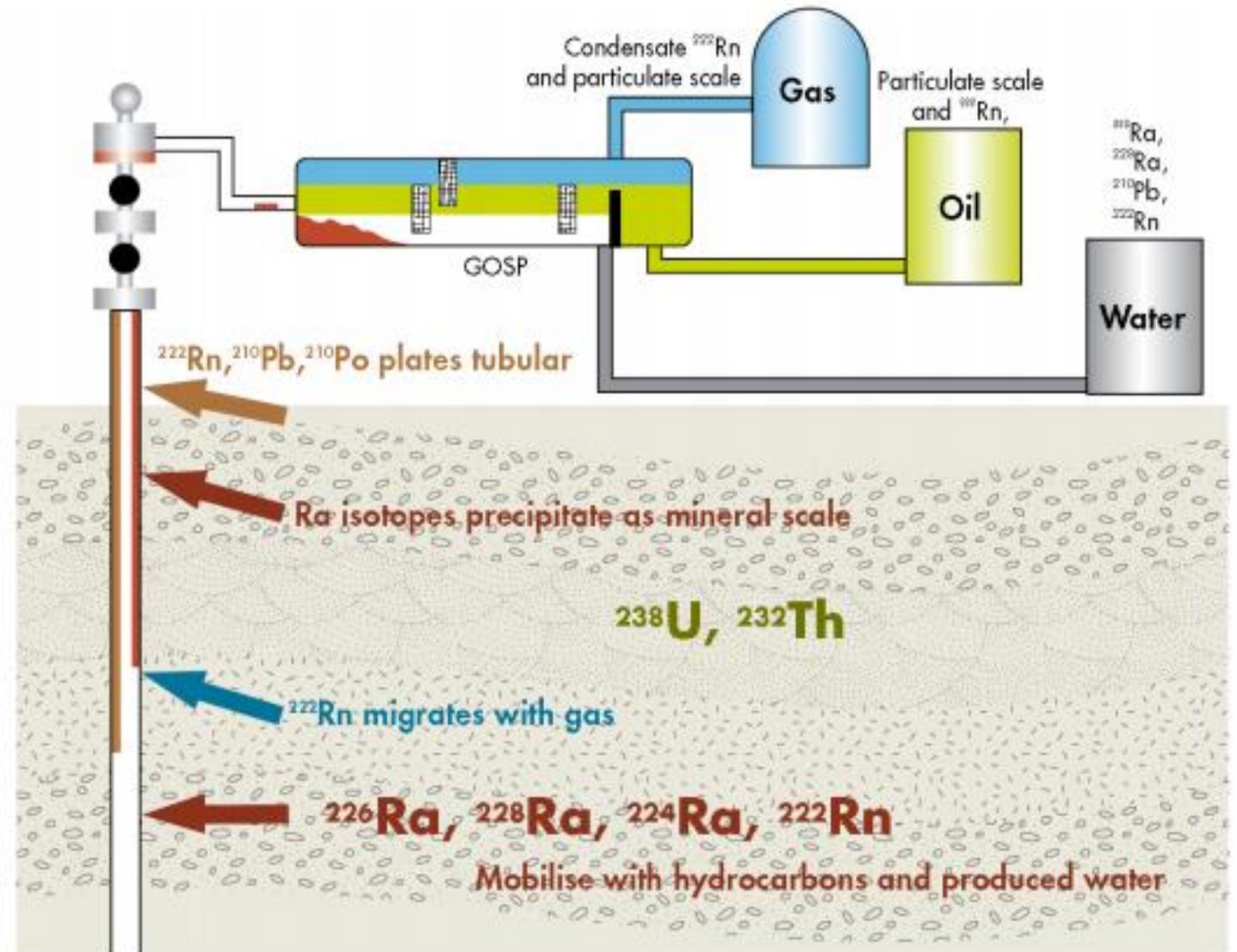
Half-life

α : Alpha radiation
β : Beta radiation

NATURALLY OCCURRING RADIOACTIVE MATERIAL



WHAT IS TENORM?



Origins of TENORM and Where It May Accumulate

Source: International Assoc. of Oil & Gas Producers, Report No. 412 (2008)

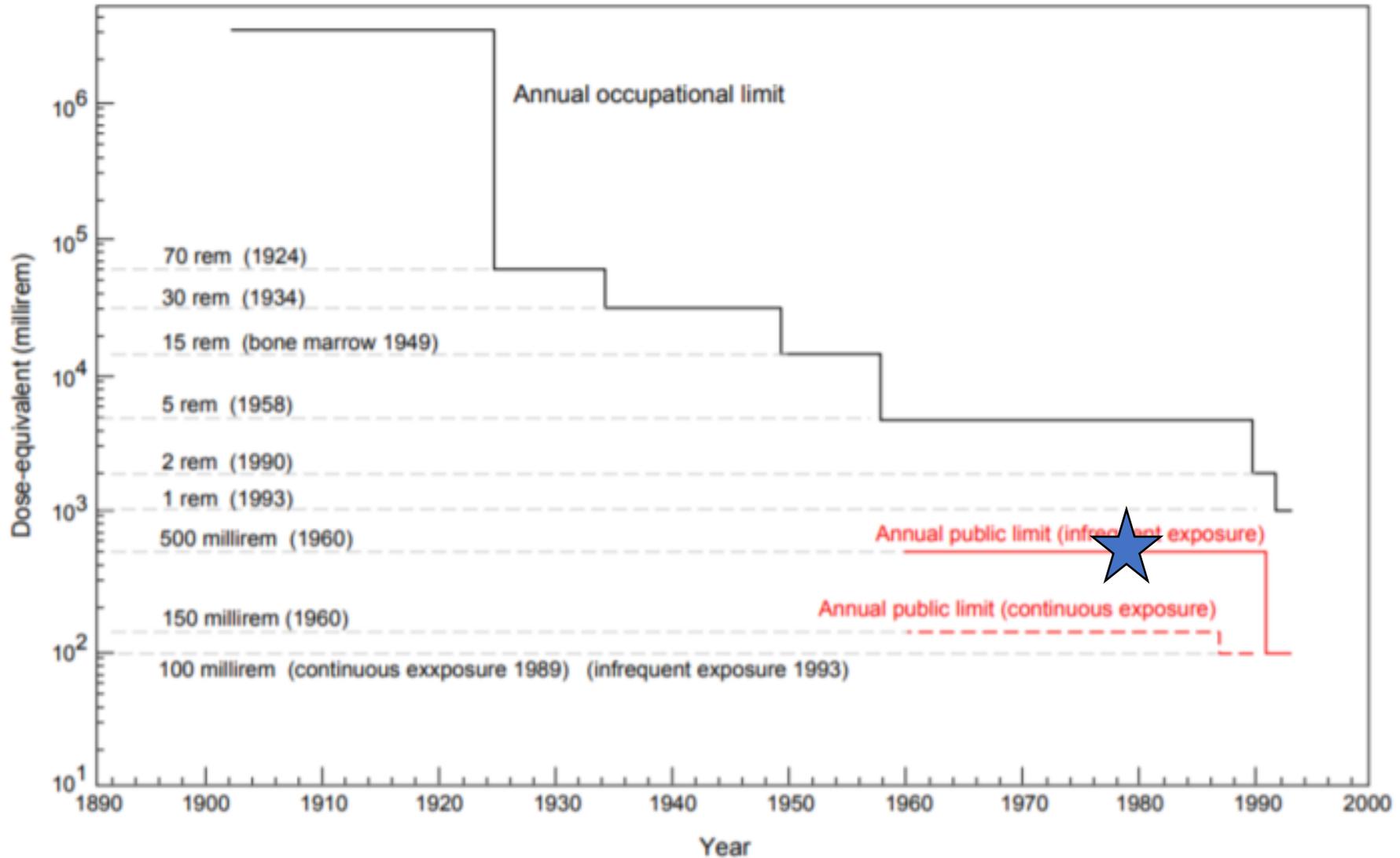


HOW IS EXEMPT NORM DEFINED NOW?

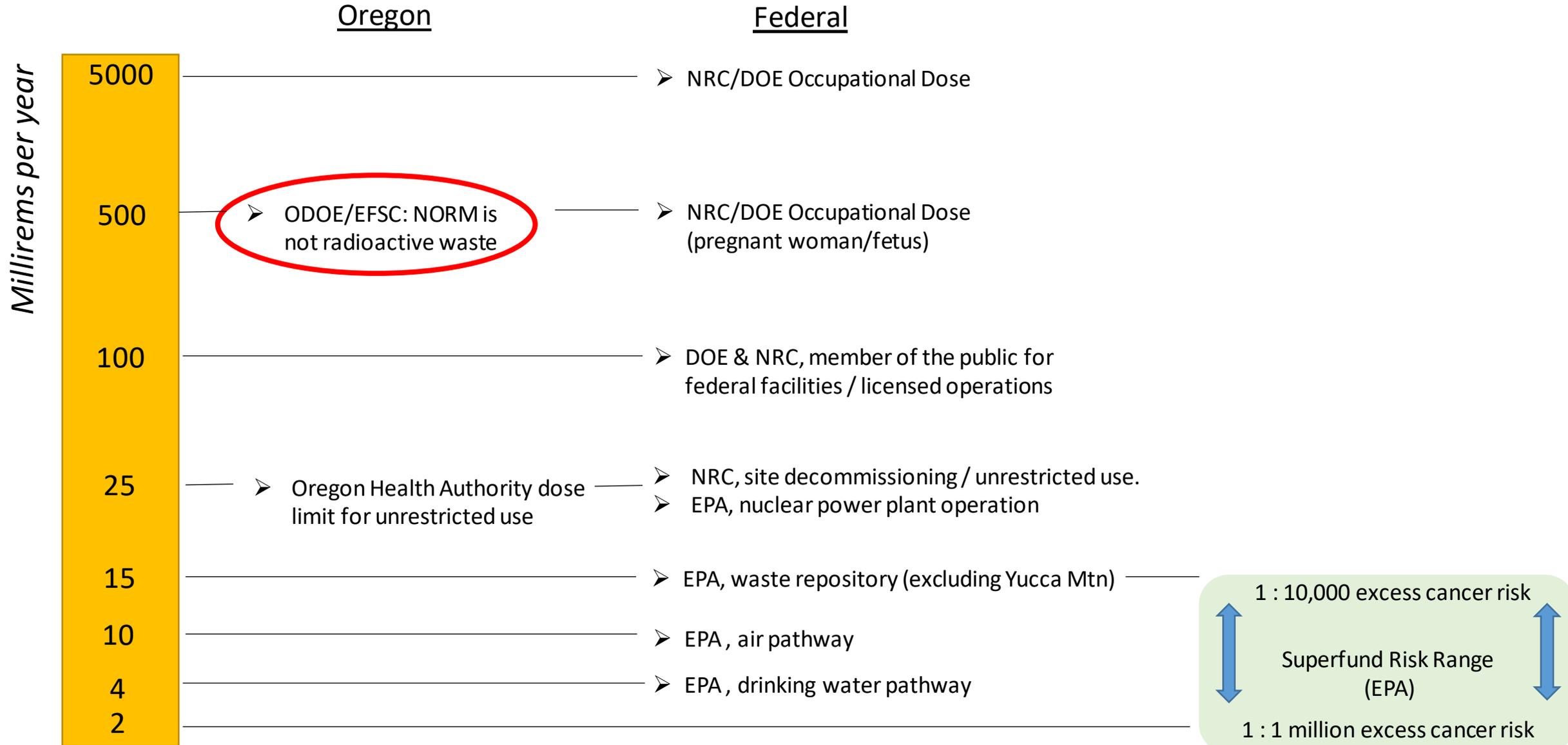
“Exempt” means the NORM does not qualify as “radioactive waste” in Oregon and may be disposed anywhere (i.e., landfill not assumed).

1. Quantity/Concentration thresholds for Uranium, Thorium, and Radium are low and generally consistent with many other states.
2. Pathway Exemption (if thresholds are exceeded):
 - a) **External gamma** dose of **500 millirem/year** based on direct measurement + model
 - b) Testing of actual waste required to ensure it will not **leach to water and air** above specified concentrations in Table 3 of the rule (also based on 500 millirem/year).
 - c) **Radon-specific value** must be met (based on 3 pCi/L or 0.033 WL) as supported by measurements and a model assuming a house built on the waste.

SAFE DOSE BASIS HAS CHANGED



NEED FOR IN-STATE AND FEDERAL CONSISTENCY



States lack rules for radioactive drilling waste disposal

New report calls for stronger regulation to protect human health and water quality.

Jodi Peterson | Nov. 23, 2015 |



Regulators Prep for North Dakota Nuclear Waste Disposal

By Associated Press, Wire Service Content Aug. 17, 2020, at 1:01 a.m.



RADWASTE

FEBRUARY 23, 2018

Colorado Bill Would Require Rules for TENORM Disposal

BY CHRIS SCHNEIDMILLER

courier journal

Kentucky to look at new fracking rules

LEXOLOGY

Pennsylvania and Ohio regulatory efforts regarding NORM/TENORM in oil and gas production wastes

King & Spalding LLP

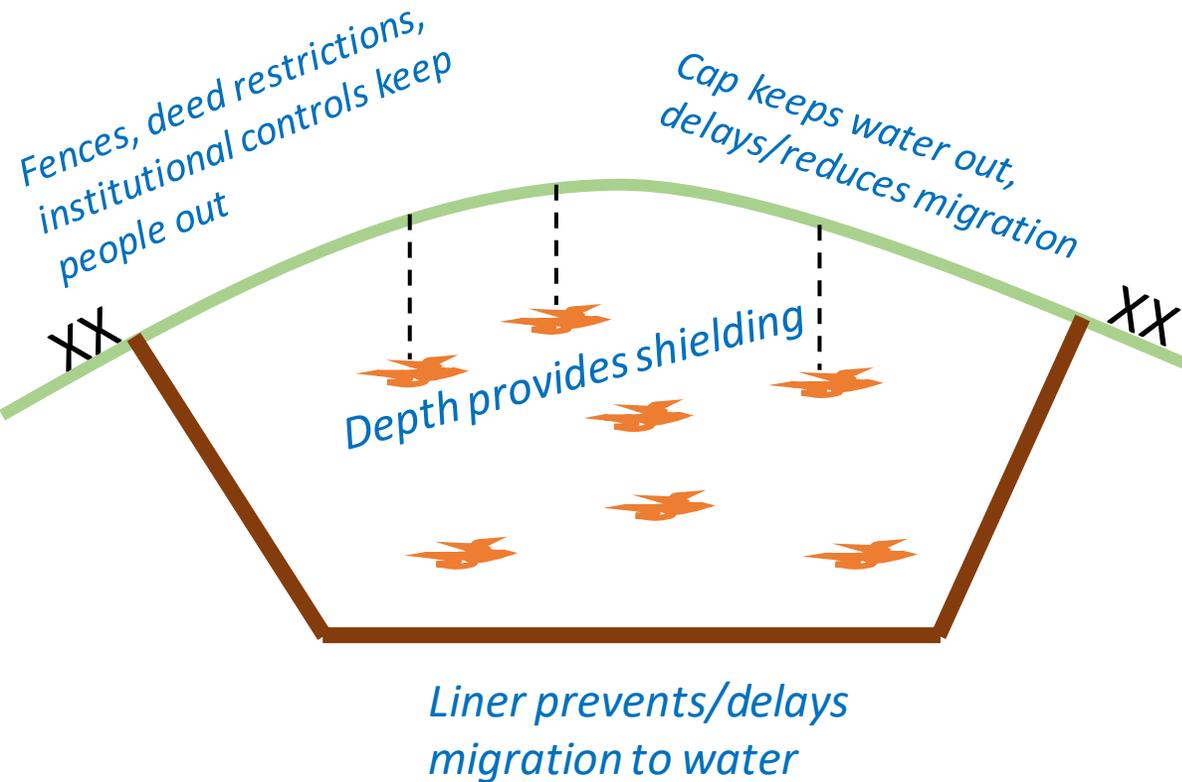


Montana's first rules limiting radioactive waste from oilfields set to take effect

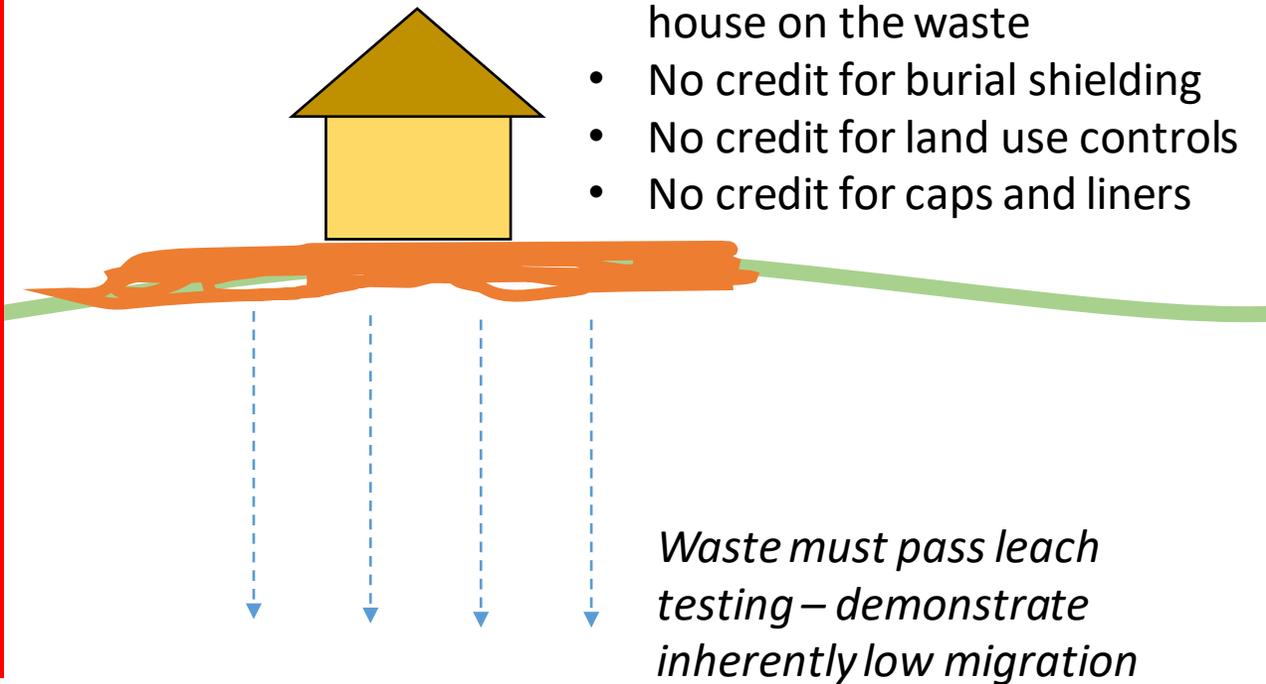
Phoebe Tollefson May 28, 2020

OREGON'S RULES ARE FUNDAMENTALLY DIFFERENT

*Some other states allow disposal
in permitted facilities with safety features
(supported by predictive environmental model)*



**ORS 469.525: Radioactive waste
disposal facilities prohibited**
(“Radioactive waste” is defined by its risk properties)



STRENGTHENING ENFORCEMENT AND PREVENTION

- Thinking beyond standard-keeping: “neighborhood beat” model of prevention
- Need information to build a system map, prioritize vulnerabilities
- Need clarity on ODOE authority to require compliance or preventative measures
- Strengthened investigative powers to pursue potential violations



Drive-Thru Radiation Detecting Portal Monitor

Questions?

www.oregon.gov/energy | christy.splitt@oregon.gov



Alpha radiation emitting from natural U-238