I&W Brine Well Update

Radioactive & Hazardous Materials Committee

October 22, 2015

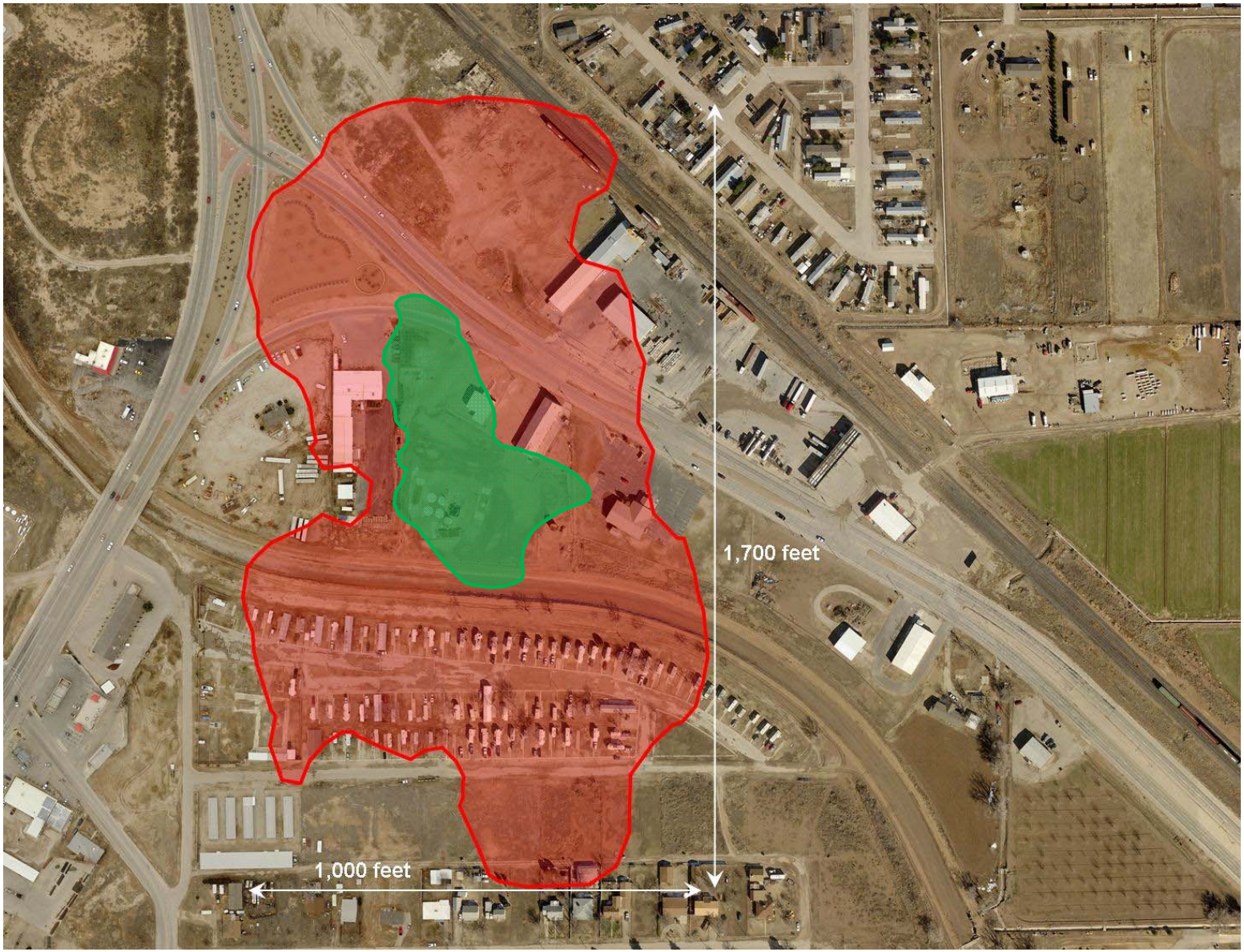
Jim’s Water Service

July 2008

Loco Hills Water Disposal

November 2008

I&W



Cavern Roof Stability

"The statistical evaluations of probability of failure and cavern lifespan indicate a high probability of catastrophic failure within 10 to 25 years. There is limited time to take action to prevent cavern failure and continued surface subsidence." AMEC 2014

Borehole Tiltmeters

Sustained movement at all 4 tiltmeter locations

Microseismic Sensors

Rock movement or breakage event every 17.6 days
9 events over 2 days in November (9th and 10th)
Two largest single events on October 24th and February 12th

Cavern Pressure Monitoring

Instantaneous pressure drops on October 26th and February 23rd

Alternative	Long-Term Effectiveness and Permanence	Reduction of Hazards	Short-Term Effectiveness	Implementibility	Total Cost	Average Annual Cost
Institutional Controls (ICs) with Monitoring	Does not fully protect public welfare, the environment, or property	No	Continued monitoring through existing network	Easy. Limited site work.	_	$240,000
Cavern Abandonment with Monitoring and ICs	Does not fully protect public welfare, the environment, or property	Possible	Cavern roof could collapse prior to implementation	Easy. Testing is required to determine if cavern abandonment can be implemented.	_	$320,000
Controlled Collapse	Permanent remedy	Yes	None	Difficult. Significant risk to groundwater. Not protective of environment.	$50 million	_
In Situ Fill with Monitoring and ICs	Permanent remedy	Yes	Cavern roof could collapse during evaluation and implementation and existing monitoring system would not function properly during filling.	Moderate. Investigation, testing, and design are required prior to implementation.	$15 to $25 million	_