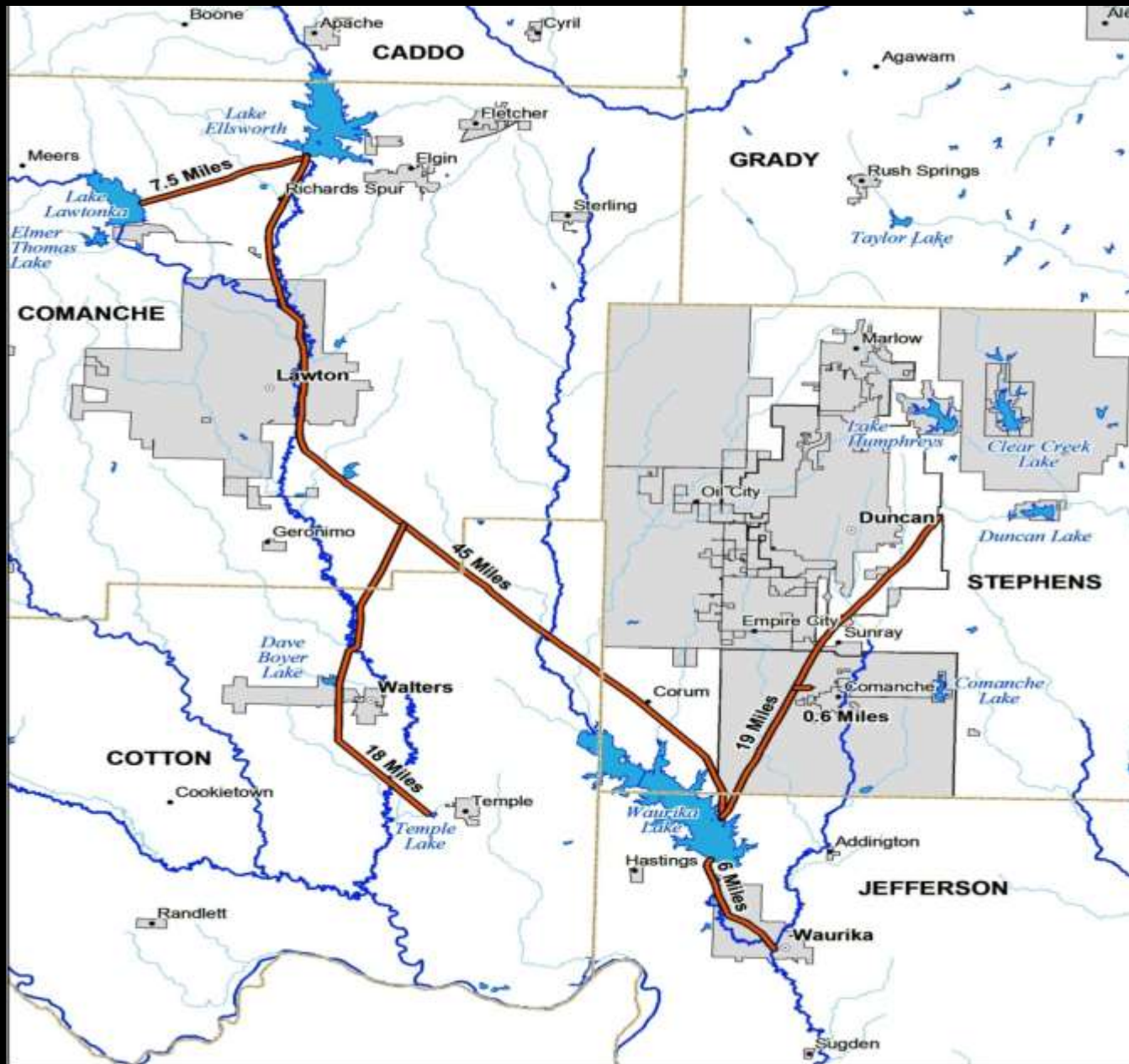


Zebra Mussels Waurika lake

1. What they are
2. Where they are
3. Potential impacts
4. Plan to gather information
5. Plan to address
6. Results

What they are

1. Small mollusk
2. Native to Eastern Europe..East of Ukraine
3. Stick to surfaces (think barnacle)
4. Started in Lake Erie 1988
5. Moving steadily South and West
6. Will block water intakes and pipe
7. Sensitive to low DO, high pH, Zinc and copper (et. al.)



Where they are

1. Intake pump house
2. East line to 2nd mile
3. 10 other lakes in OK
4. In Lake itself
5. West Line first few miles



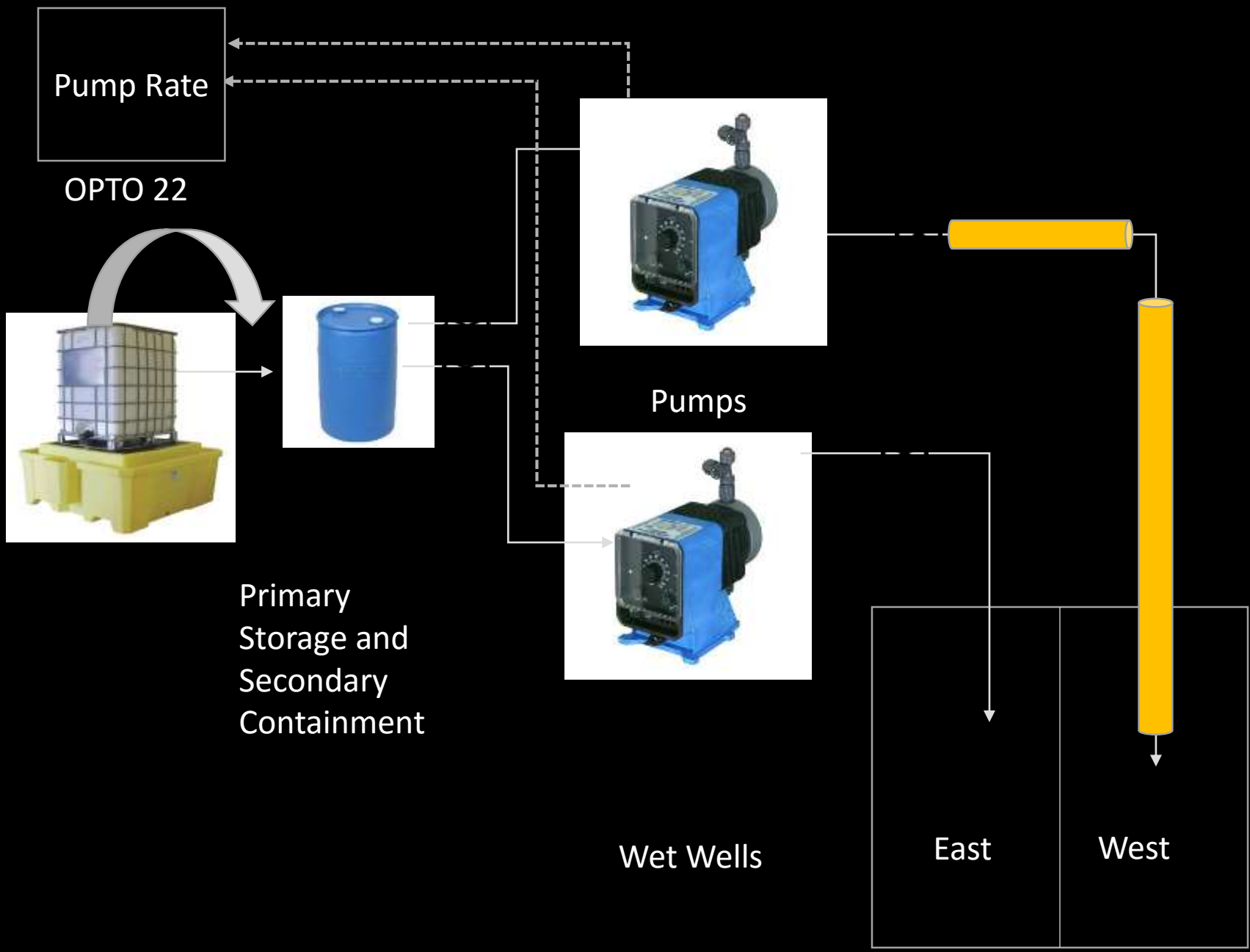
Potential Impacts

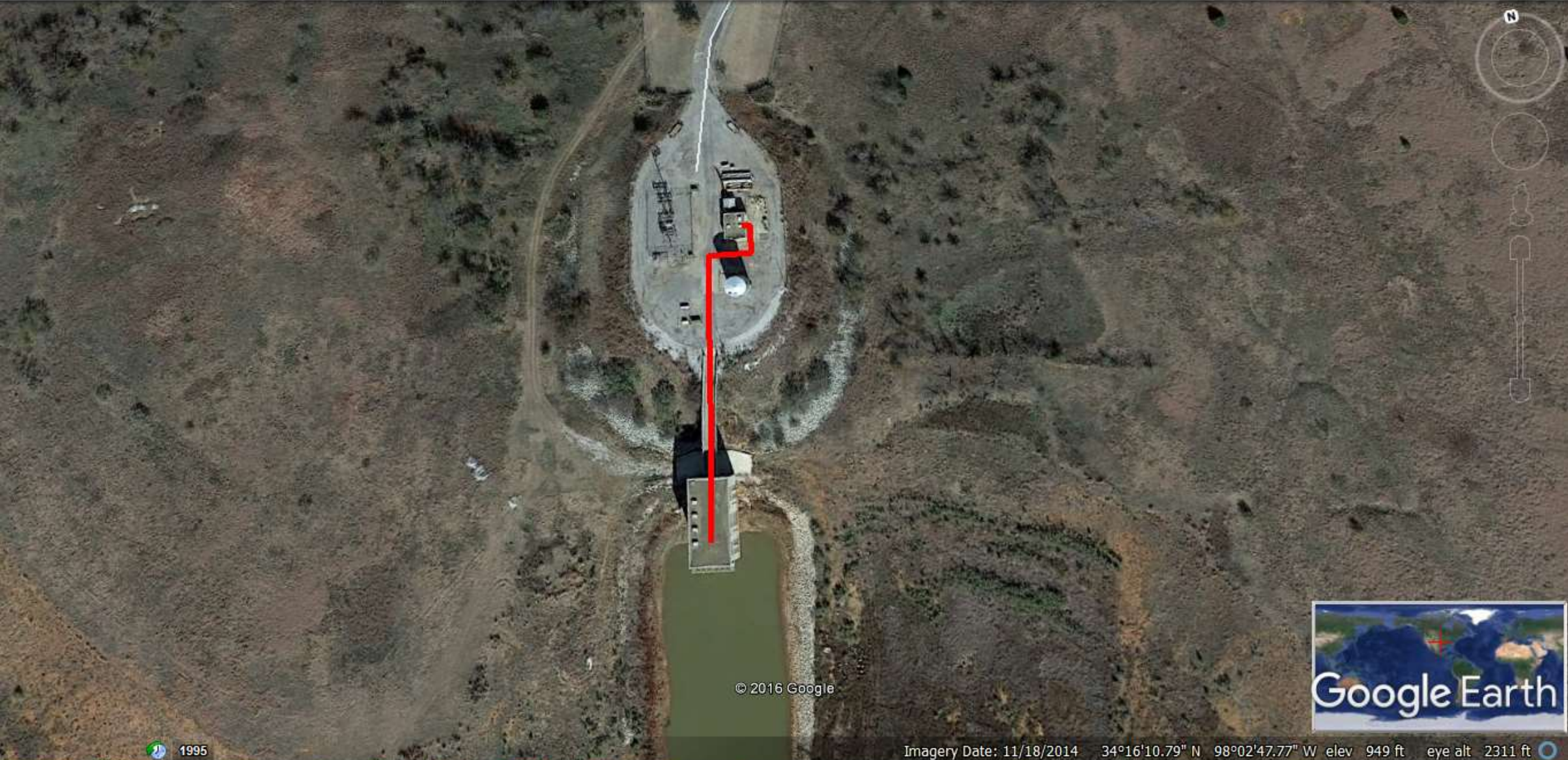
1. Stick to...anything solid
2. Multiply rapidly
3. Will not adhere if flow is above 6 ft/sec
4. Clogging
5. Ruin pumps
6. Plug valves
7.



The Plan:

1. Communicate
2. Research
3. Plan
4. Act - Feeding Anti-mussel CuSO₄ (EarthTec) started 8/6
 - Rate is 1 gal Earthtec/million gallons water
 - 60 ppb copper ++ ion
 - Pay attention to potential spillage
5. Check – will grow mussels in “bioboxes”
6. Assess effectiveness and respond





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Imagery Date: 11/18/2014 34°16'10.79" N 98°02'47.77" W elev 949 ft eye alt 2311 ft

1995





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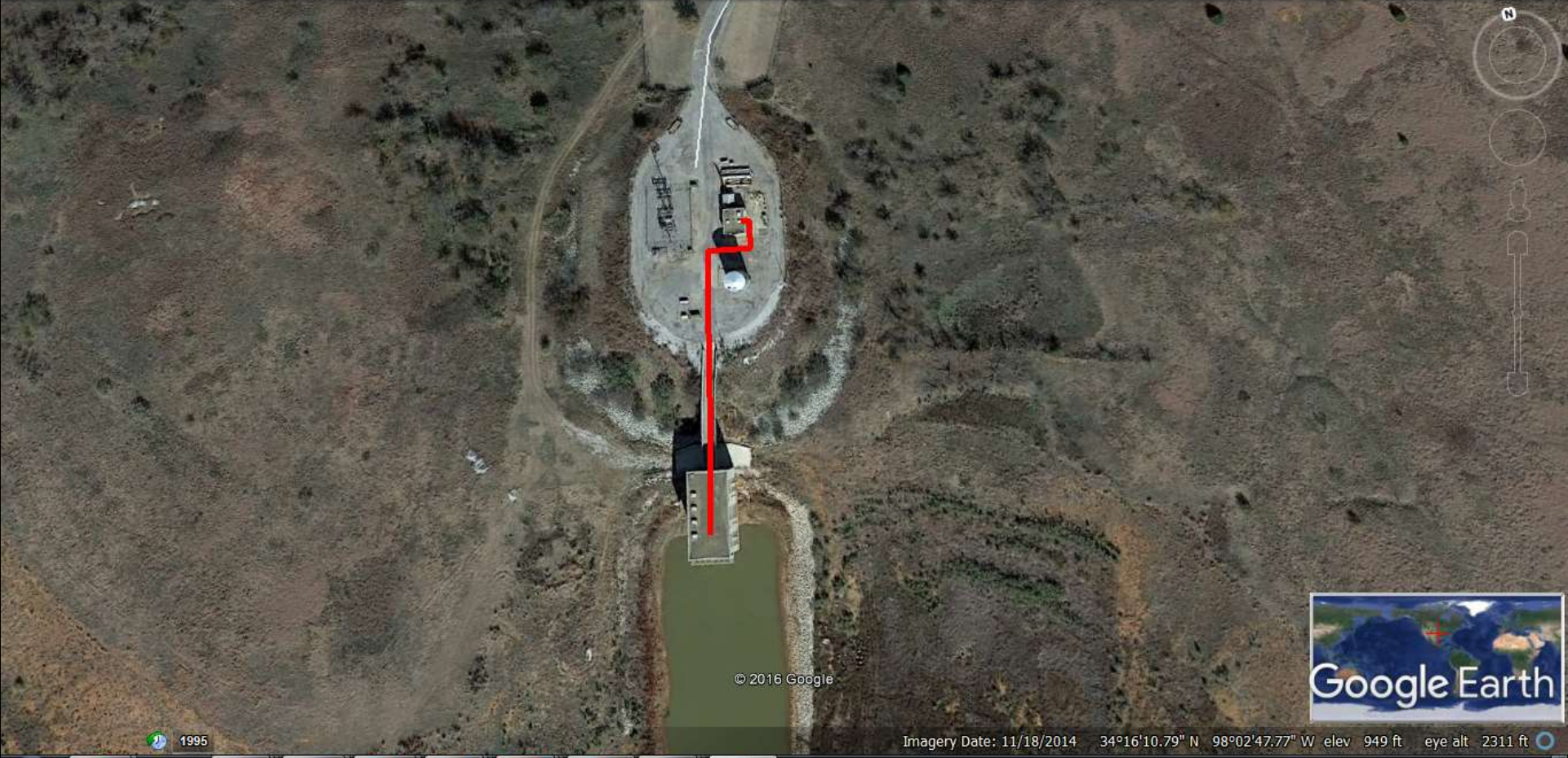


Imagery Date: 11/18/2014 34°15'56.25" N 98°02'56.95" W elev 949 ft eye alt 5521 ft

Dave Taylor

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(580) 512-4609



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Imagery Date: 11/18/2014 34°16'10.79" N 98°02'47.77" W elev 949 ft eye alt 2311 ft



Fish Consumption

Fish Consumption Advisory -- Mercury

- There is now an advisory for Waurika Lake
- It is for large members of certain species
- It is NOT fishing, swimming, consumption or boating ban
- Eat the fish you catch, be mindful of the advisory
- Some categories of people should not eat the fish

Mercury in water

- From erosion, volcanos, power plants
- Attaches to airborne dust
- Lands in water and sinks
- 13.6 times heavier than water
- Elemental (pure) mercury is much less risky

- Methyl mercury is main source of risk
In high acid and high oxygen systems

- Accumulates in predators
- Remember, we used mercurochrome and merthiolate....a lot!!

Restriction Descriptions

Sensitive Population

Child bearing Age

Pregnant or nursing

Children 15 and below

General Population

Men older than 15

Women past childbearing age

Consumptions

Two Meals per month

Or

No Meals per month

Or

Do not eat

Or

No Restriction

[Healthy Fish Information](#)

[Mercury in Fish](#)

[Pesticides in Southwest Oklahoma](#)

[Tar Creek Information](#)

[The Benefits of Eating Fish](#) | [How to Properly Cook Fish](#) | [Delicious, Healthy Fish Recipes](#)

KIDDIE CORNER

For Me

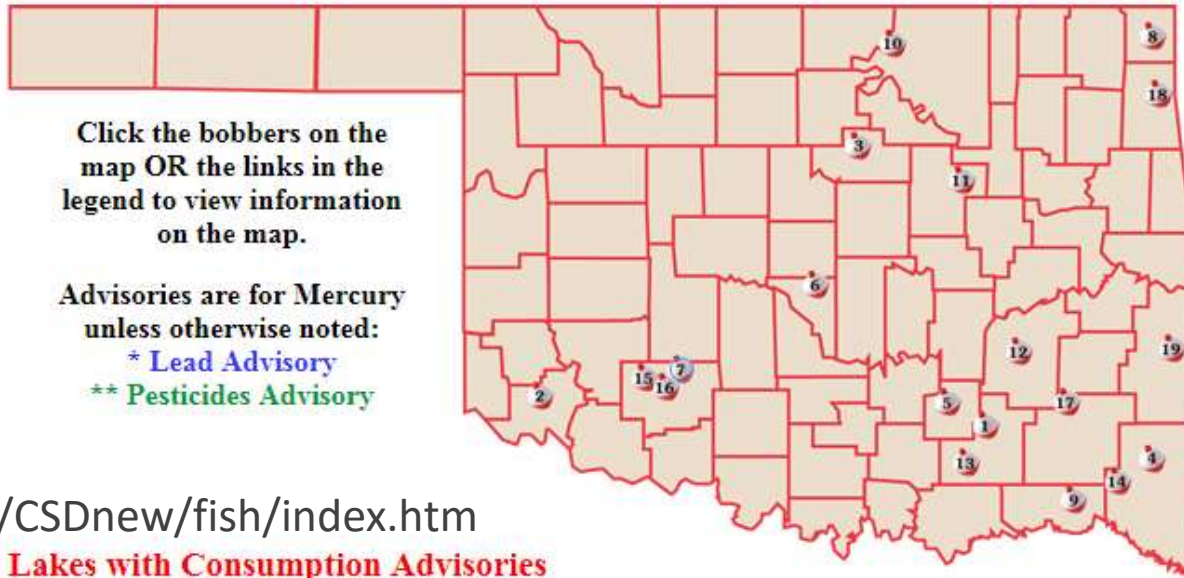
- [Super Cool Coloring Book](#)
- [Awesome Crossword Puzzle](#)
- [Really Fantastic Storybook](#)

For My Parents

- [The Benefits of Eating Fish](#)
- [The Effects of Mercury](#)
- [Fish Recipes](#)
- [How to Cook Fish](#)

For My Teachers

- [Coloring Book for My Students](#)
- [Crossword Puzzle for My](#)



Hook, Line
And supper

www.deq.state.ok.us/CSDnew/fish/index.htm

Lakes with Consumption Advisories

- | | | |
|---------------------------|------------------------|---------------------------|
| 1. Atoka Lake | 7. Elmer Thomas Lake | 13. McGee Creek Reservoir |
| 2. Bitter Creek ** | 8. Grand Lake * | 14. Pine Creek Reservoir |
| 3. Boomer Lake | 9. Hugo Lake | 15. Quanah Parker Lake |
| 4. Broken Bow Reservoir | 10. Kaw Reservoir | 16. Rush Lake |

Elmer Thomas Lake		
Elevation: 1,383 ft	Area: 334 acres	Shoreline: 8 miles
Elmer Thomas Lake Fish Advisory Elmer Thomas Lake Fish Survey Results		

Waurika ...no restrictions for general population

Blue Catfish and Largemouth bass: No restriction to 19 inches
2 meals per month under 19

Flathead Catfish: No restriction under 30 inches
2 meals per month under 30

Spotted Bass : two meals per month any size

Gather information and address

1. Notify all cities
2. Notify all agencies: USACE, USBR, ODWC, OWRB, USGS
3. Internet research
4. Begin task group with cities
5. Interview other OK and NTex entities
6. Formulate potential technologies
7. Review, assure meets all needs

What we know

1. They are in pump house and piping
2. Multiply prolifically
3. Are sensitive to some chemicals
4. Are sensitive to low DO
5. Can be controlled

What we do not know

7. Best way to address
8. Where to treat
9. Cost and labor needs

