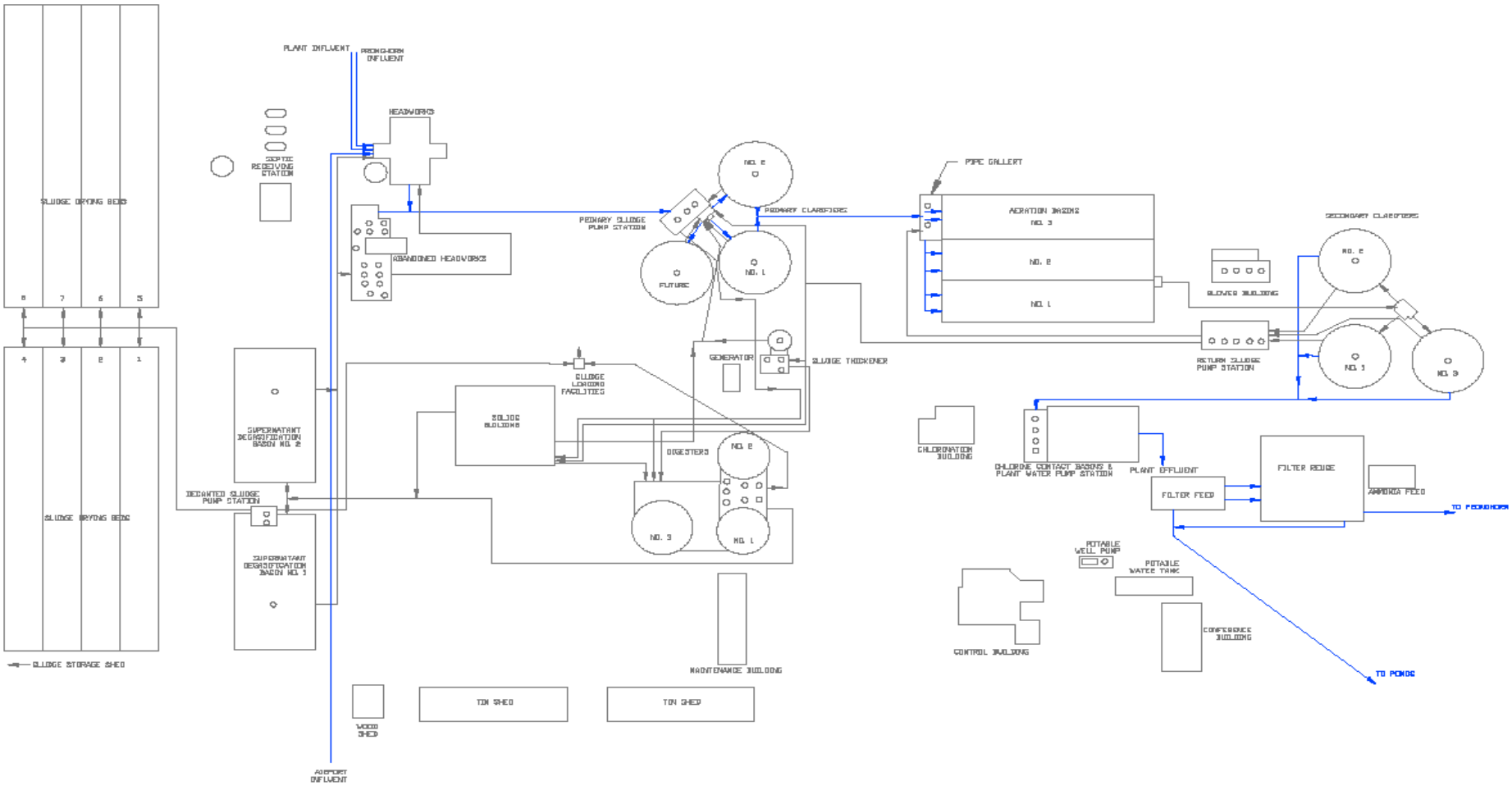
CITY OF BEND'S UNLIKELY PATH TO CLASS A BIOSOLIDS

CITY OF BEND WATER RECLAMATION FACILITY

WATER RECLAMATION FACILITY

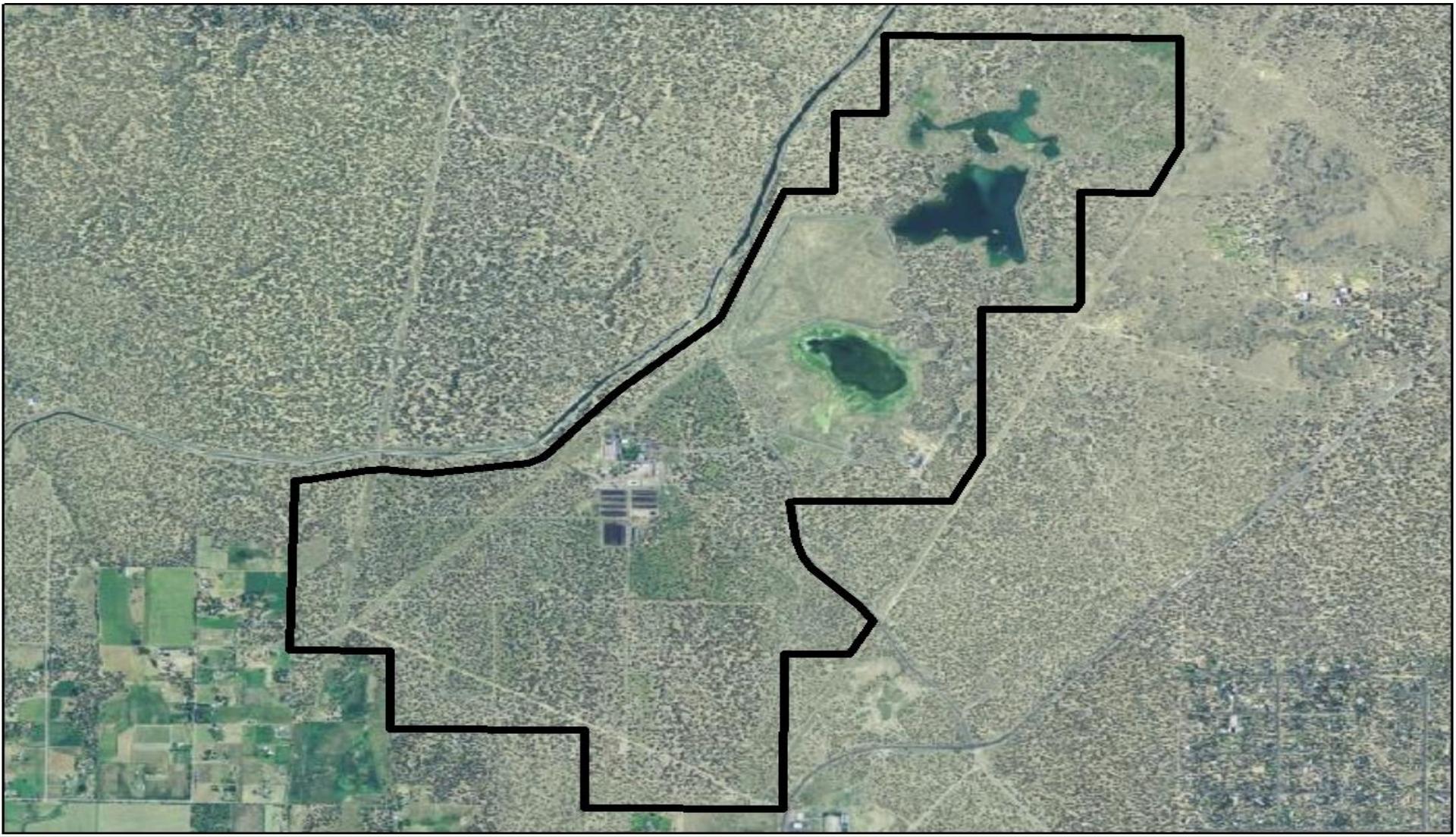


- Average Daily Flow: 5.8MGD
- Reuse Flow Pronghorn Golf Course: >2.5MGD
- Digester Sludge Concentration: 3.3%
- Solids Production :2,500 cu/yd/yr
- Available Application Land: 1600 acres

HEADWORKS SCREENING EQUIPMENT 3MM AND 6 MM SCREENING

ANAEROBIC DIGESTERS ONE 900,000 AND TWO 450,000 GALLON

1600 ACRES PLANT FACILITIES



12 ACRES OF DRYING BED CAPACITY

SUMMER DRYING PERIOD

MID SUMMER OPERATION

LAND APPLICATION OF BIOSOLIDS 1,6OO ACRES APPLICATION SITES.

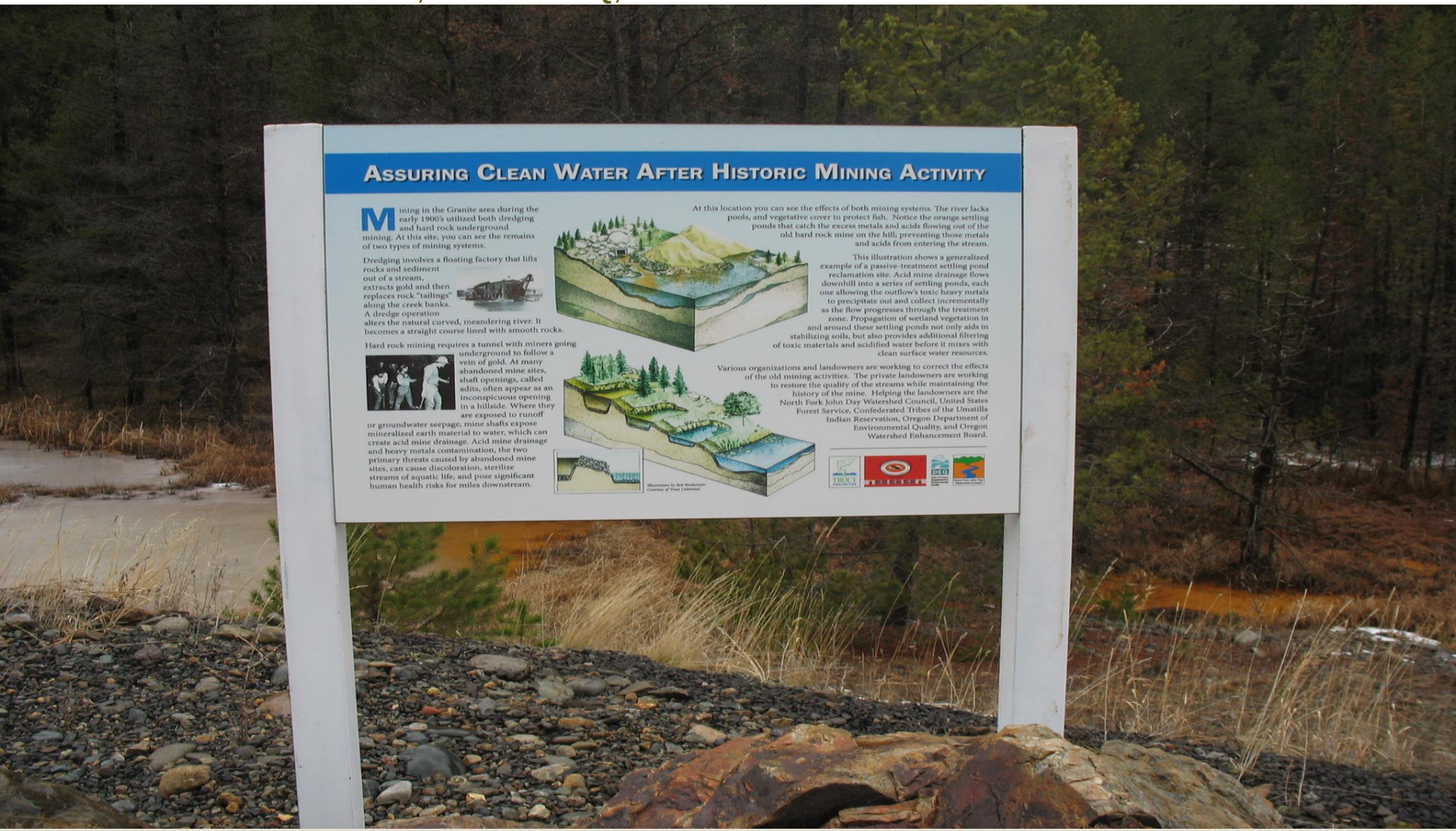
LATE WINTER LAND APPLICATION

LAND APPLICATION

USFS CLEAR CREEK STUDY SITE

DECEMBER 2014 CLEAR CREEK STUDY SITE

CLEAR CREEK SITE STAKEHOLDERS:NORTH FORK JOHN DAY WATERSHED COUNSEL,UNITED STATES FOREST SERVICE,CONFEDERATED TRIBES OF UMATILLA, OREGON DEQ, OREGON WATERSHED ENHANCEMENT BOARD.




07/09/2015


07/09/2015

BIO-CHAR AND WOOD CHIPS


07/09/2015

Fecal Coliform Limit		
Less than 1,000 MPN/gram Dry Weight		
Salmonella Limit		
Less than 3 MPN/ 4 grams Dry Weight		
Helminth Ova Limit		
Less than 1 Viable Ova/ 4 grams Dry Weight		
Enteric Virus Limit		
Less than 1 PFU/ 4 grams Dry Weight		

Analyte (mg/kg Dry Weight)	Average (mg/kg Dry Weight)
Total Kjeldahl Nitrogen	55500
*Ammonia as N	1940
*Nitrate as N	137
*Organic N	53500
Total Phosphorus(P)	30250
Potassium(K)	2900
PH	7.10
Total Solids %	89.0
Volatile Solids %	68.3
Analyte (mg/kg Dry Weight)	Average (mg/kg Dry Weight)
Arsenic	3.8
Cadmium	1.1
Chromium	18
Copper	338
Lead	30
** Mercury	0.5
Molybdenum	8.1
Nickel	19
Selenium	3.4
Silver	4.1
Zinc	478

Sample Numbers: BioVir Laboratories	141492-008
Enteric Virus pfu/4 g TS	<1
Total Solids	88.5
Sample Name	Composite of #1-7
Sample Numbers: City of Bend	Zone 1
Sample Numbers: BioVir Laboratories	141492-008
Viable Helminth Ova	<1
Total Solids	88.5
Sample Name	Zone 1
Sample Numbers: City of Bend	B4J2107-01
Sample Numbers: Soil Control Laboratories	4100690-1
Fecal Coliform MPN/g	930
Salmonella MPN/g	<3
Total Solids	88.9

- Biochar has been used as a soil amendment in many agricultural systems. It can improve soil organic matter, nutrient cycling, and water holding capacity to enhance plant growth. Its composition is highly variable and the final product is a result of fuel type and moisture content, burn condition, duration, and ambient temperature. Past studies have shown increased water retention of biochar-amended agricultural soils.

- Even though the control was planted similar to the soil amendment treatments there was little to no vegetation.
- Wood chips are not a suitable amendment for mine land reclamation at this site.
- Some combination of Biosolids(nutrient) and biochar(water holding) are probably a good place to continue working if vegetation is the goal.
- Researchers will be on site this month to gather nutrient data. More to come…….

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- http://wastetowisdom.com/sustainability-analysis/subtask-3-2/subtask-3-2-photo-essay/

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