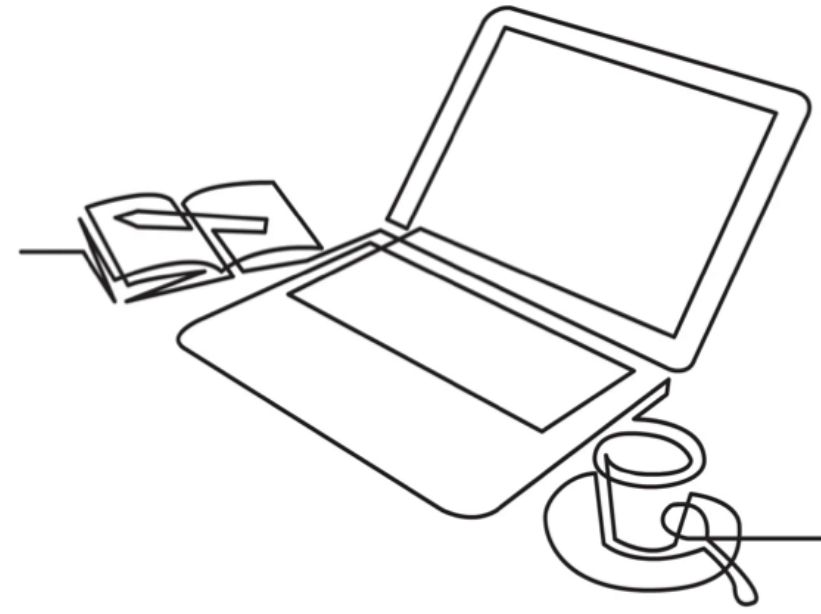
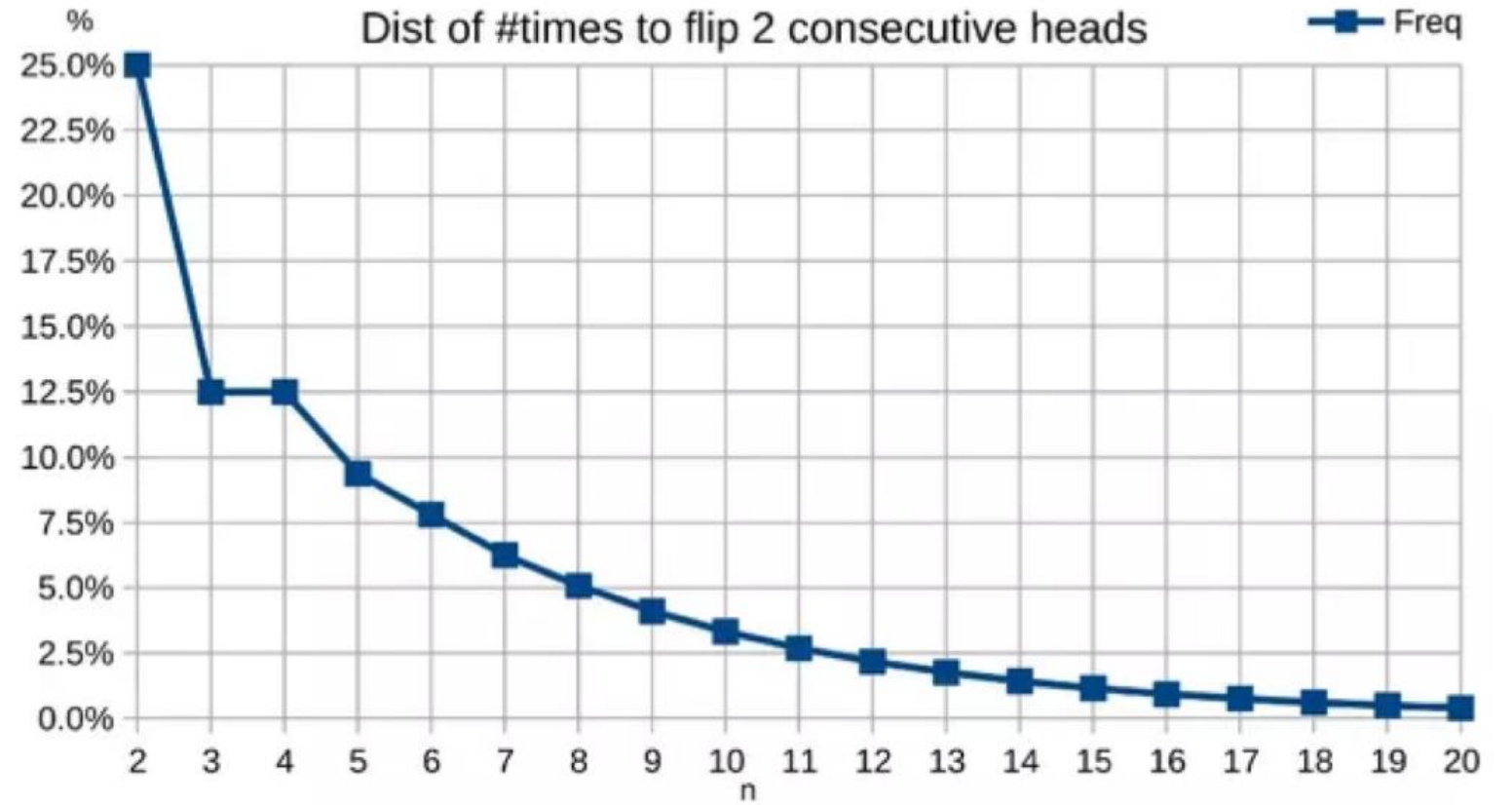
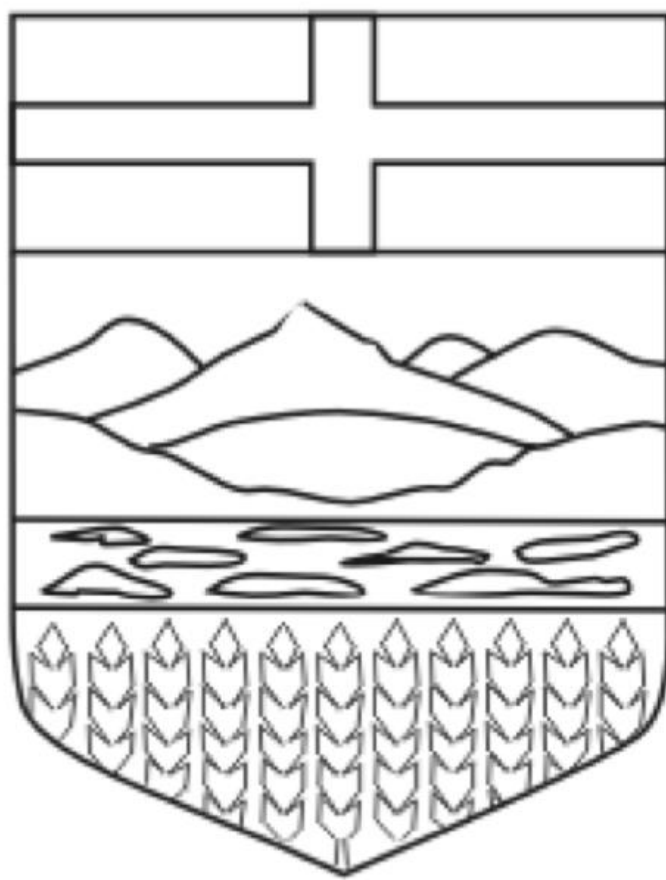


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EC < 3

Alberta



Data Mining vs Data Exploration

“ Data mining generally refers to gathering relevant data from large databases. Data exploration, on the other hand, generally refers to a data user being able to find his or her way through large amounts of data in order to gather necessary information. ”



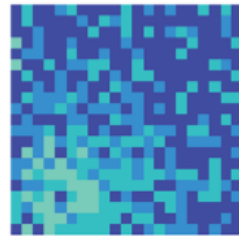
data

information without context or relationship



knowledge

relationships and patterns between data points emerge



insight

actual risk can be quantified using repeatable and defensible pattern analysis



action

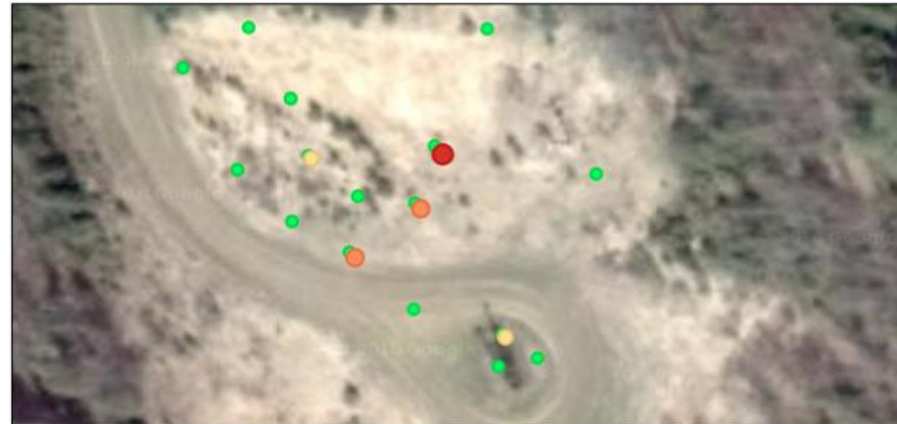
an efficient solution can be planned and implemented



Manual Exploration

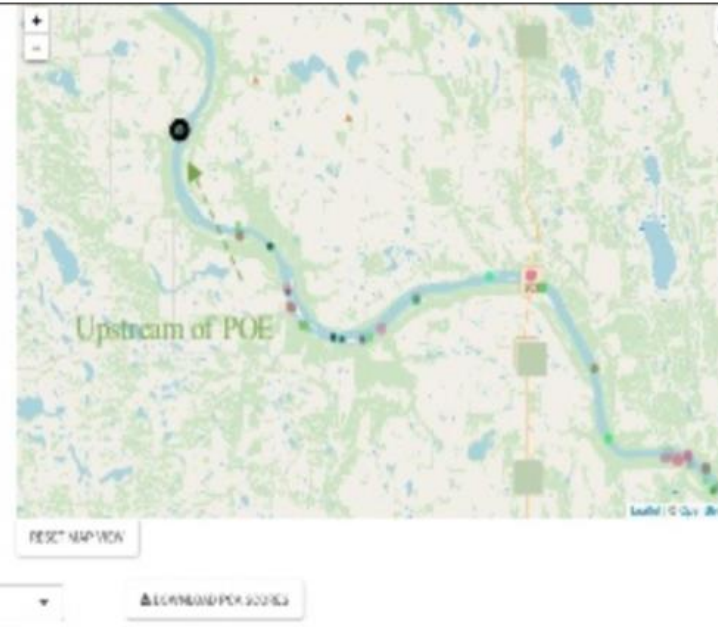
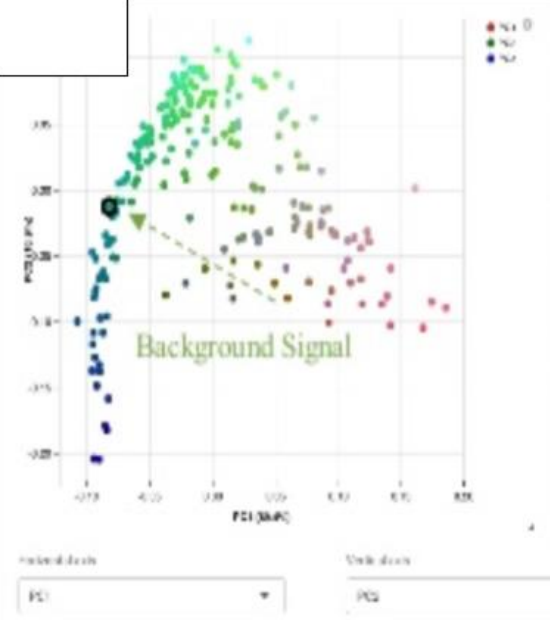
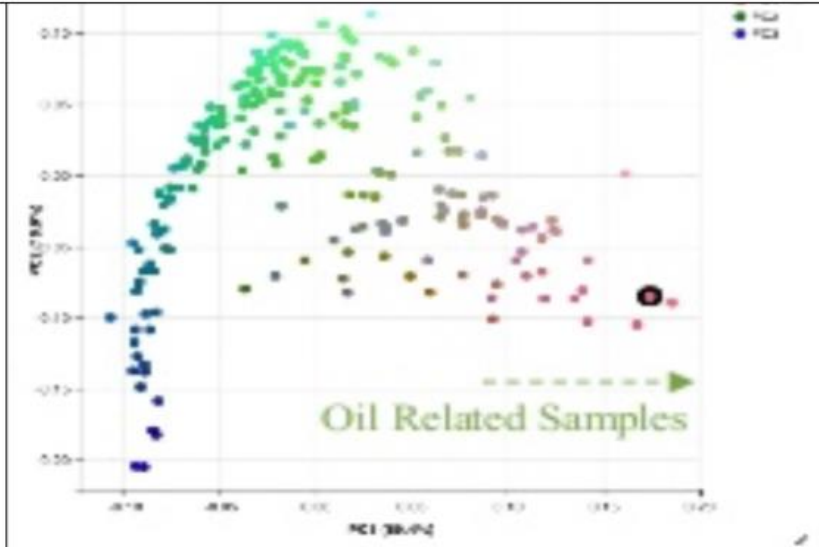
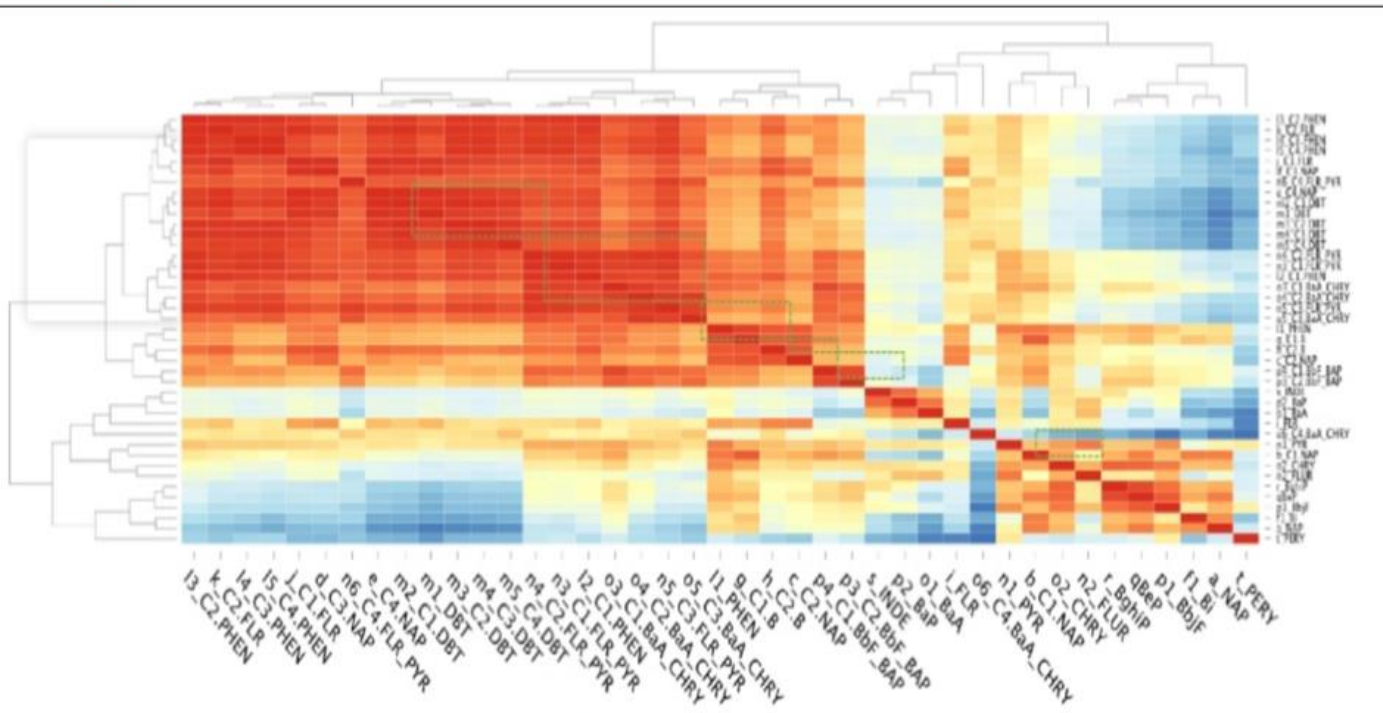
- Tabulate data
- Compare to generic guidelines
- Visualize data against generic guidelines

-115.6190244	53.29654987	0.023	0.005	0.02	0.03	10	50	160
-115.6190244	53.29654987	0.014	0.005	0.02	0.03	10	50	206
-115.6190188	53.29658681	0.103	0.522	0.02	3.37	303	628	2040
-115.6190188	53.29658681	0.005	0.005	0.02	0.03	10	50	176
-115.6189514	53.29655993							
-115.6189514	53.29655993	0.005	0.005	0.02	0.03	10	50	107
-115.6193897	53.29679169							
-115.6193897	53.29679169	1.12	2.65	4.33	12.2	436	447	759
-115.6193897	53.29679169	0.068	0.35	0.71	2.12	54	88	333
-115.6193897	53.29679169							
-115.6193138	53.29668253	1.12	11.8	0.6	21.1	1250	3480	5480
-115.6193138	53.29668253	0.007	0.089	0.02	0.08	18	50	234
-115.6194234	53.2967178	0.008	0.102	0.02	0.14	20	50	50
-115.6194234	53.2967178							
-115.6194234	53.2967178	0.005	0.005	0.02	0.03	10	50	149
-115.6194234	53.2967178							
-115.619297	53.29674635	0.005	0.067	0.02	0.38	13	50	264
-115.619297	53.29674635	0.093	1.02	0.02	5.14	107	263	485





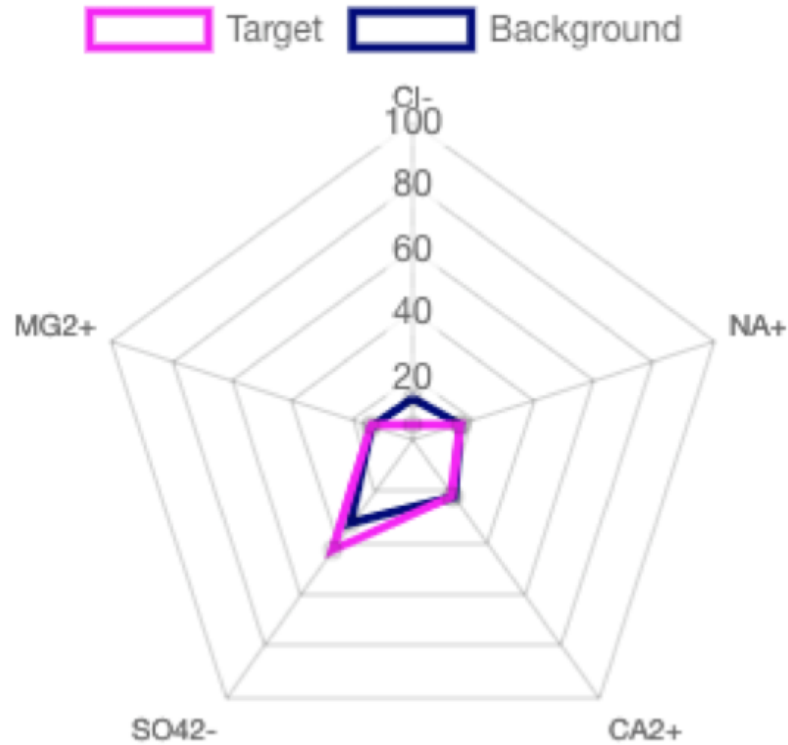
Weight of Evidence





Pattern Recognition

Background



Source



- 1 area requiring remediation
- 32 tonnes estimated remedial volume
- Cost estimate \$4,800

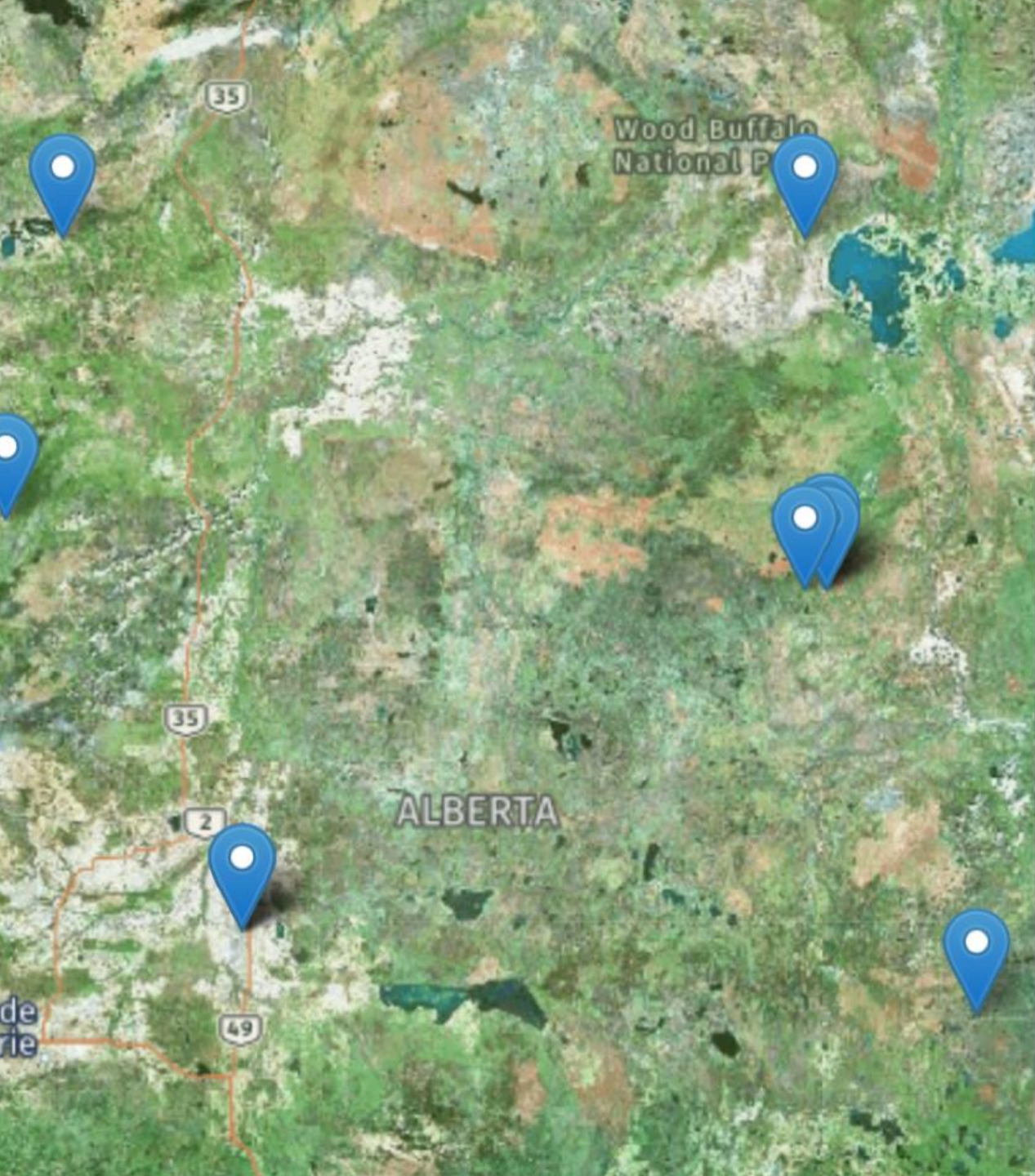
Post



Pre

- 3 areas requiring remediation
- 535 tonnes estimated remedial volume
- Cost estimate \$81,000





Program Results

Previous Estimate:

- At least 2 seasons (years) to reclamation
- 14,900 tonnes to be remediated
- Estimated cost of \$2.25 Million

Estimate After Data Exploration:

- 1 season to reclamation
- 6,600 tonnes to be remediated
- Estimated cost \$996,000

Benefits:

- 8,300 tonnes of unimpacted material kept out of landfills
- Less time to reclamation
- \$1.25 Million in client savings

