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School: Mount Vernon Middle School, Mount Vernon, IA
Teacher: Mrs. Scarce

Proposal:

Our feature's name is Don Juan Pond (DJP) and it is a hypersaline pond with no fish (only hardy bacteria.) The description on Lima says- "A shallow saline pond located south of the Dais in the South Fork of Wright Valley, Victoria Land. The pond was sighted on Oct. 11, 1961 in a field reconnaissance by U.S. Navy helicopter. In the next three months, a USARP party with George H. Meyer and others made several trips to study the pond. They named it Don Juan Pond for Lieutenants Donald Roe and John Hickey, U.S. Navy Air Development Squadron Six, who were of assistance to the field party. A new mineral, calcium chloride hexahydrate, was discovered in the pond. The name Antarcticite was proposed for the new mineral."





It's located at 77.3400S latitude and 161.1100E longitude.

Our chosen ice feature is interesting because it is a pond in Antarctica and it is not frozen over. It is the saltiest wet place known on earth (in a surficial environment). I think the salt in D.J.P. is from the ocean once covering over D.J.P. and then retrieving back to the ocean and leaving a lot of salt in D.J.P. making it a hypersaline pond. We think there might be other ponds that aren't frozen and just aren't discovered yet. It is also very interesting that a new mineral was found in DJP and we wonder where this came from.



We can see that the water is receding by the marks on the rocks. We think the white on the rocks is salt that evaporated from the lake. Looking at this picture it seems as if the pond is shallow. It is very cool that the pond is not frozen yet the land around it has snow on it and is frozen. All in all, this is a very unique and “cool” pond.

Jim (who is a scientist) said that Don Juan Pond has water recharge as it’s source of hypersaline waters. We believe that the water recharge should be investigated more thoroughly. He also said that the “bio” side of DJP includes interesting exogenic cyanobacteria. That means that the bacteria did not originate in the pond and that it is blue-green and can photosynthesize. The current consensus is that the biota within the “pond” are introduced. That is interesting because if there was endogenic life originally it is no longer there, and it also indicates that we may be introducing things to this extreme environment and we should find out where they came from. We think the biota comes from the rocks around and in Don Juan Pond or it came from another place and the wind pushed it into and over Don Juan Pond.

This feature should be funded for further exploration because there are not many ponds in Antarctica that are not frozen, and scientists should find out why. Perhaps there are areas like this extreme environment on other planets like Mars. Also the rocks around DJP may have little endolithic bacteria and microbes in them that would be interesting to study. The environment in Antarctica is so harsh that life has found a way to exist inside rocks in order to escape the extremes. That may be another clue to finding life on other planets. If we investigate Antarctica farther to find other ponds like D.J.P. and find some we could be able to study salty ponds and that could help us learn more about salt, bacteria, the ocean, and Antarctica. We think this should further investigated. If it is further investigated it may help us study bacteria and salty places. If we drill into the rock and ice around D.J.P. we may be able to find new creatures and life plus some salt that leads to the reason why D.J.P. is so salty.



(Jenny writing a proposal)



(Delaney and Jenny typing)

Thank you for considering our proposal.