# TECHNICAL REPORT ON THE CLAYTON VALLEY LITHIUM BRINE PROPERTY,
## ESMERALDA COUNTY, NV USA

**PREPARED FOR:**
**ACME Lithium Inc.**
**318-1199 West Pender St.**
**Vancouver, BC**
**V6E 2R1**

**and**

**ACME Lithium USA Inc.**
**318 N Carson St. #208**
**Carson City, NV 89701**

**By:** **David Carlson, Geologist State of California No. 8209**
**P.O. Box 18793**
**Reno, NV 89511**
**dec@aquagroundwater.com**
**775-250-9700**

**Report Date: March 13, 2024** **Effective Date: March 13, 2024**

**Figure 1: Clayton Valley Property Drill Set Up**

# DATE AND SIGNATURE PAGE

**I, David Carlson, do certify that:**

1) I am a consulting hydrogeologist/geologist located at P.O. Box 18793, Reno NV 89511
2) The title of this report is "TECHNICAL REPORT ON THE CLAYTON VALLEY LITHIUM BRINE PROPERTY, ESMERALDA COUNTY, NV USA" dated March 13th, 2024.
3) This report is addressed to ACME Lithium Inc.
4) I graduated with a Bachelor of Science Degree (geology) from Michigan State University in 1975. I then graduated with a Master of Science Degree (geology/hydrogeology) from the University of Nevada – Reno in 1978. I am a Registered Geologist in California, Idaho, and Utah. I have worked as a geologist/hydrogeologist for a total of 46 years since my graduation from the University of Nevada – Reno. I have worked in Peru, Bolivia, Indonesia, Oman, Guatemala and the United States.
5) For the current report, I have reviewed the mining information, geology, site visit, and results of prior work on the property.
6) My most recent personal inspection of the property was on November 30th 2023.
7) I have had no involvement with the property prior to the site visits and preparation of the report.
8) I am responsible for the entire contents of this report.
9) I am independent of ACME Lithium Inc. applying all of the tests in Section 1.5 of NI 43-101
10) I have read NI 43-101 and Form 43-101F1, and this Technical Report has been prepared in compliance with that instrument and form.
11) As of the effective date of this report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

March 13, 2024

PROFESSIONAL GEOLOGIST
David Elton Carlson
8209
STATE OF CALIFORNIA

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# 1. SUMMARY

**ACME Lithium Inc. is a mineral exploration company ("the Company") that through an option to acquire and staking has the right to acquire a 100% interest in 119 unpatented placer mining claims totaling approximately 2,230 acres ("the Property") in the northwestern quadrant of Clayton Valley, Esmeralda County, Nevada USA. The claims adjoin Albemarle Corporation's Clayton Valley operations which have been producing lithium since 1966.**

**An inferred resource has been calculated for the Property of 302,900 metric tons of lithium carbonate equivalent (LCE) based on recently completed drilling. The drill program found basin stratigraphic aquifers consistent with that reported for the nearby Albemarle Corp. and Pure Energy Minerals (now SLB) properties and with an average lithium grade of 96 milligrams/liter in the basal Lower Gravel Unit which is comparable to reported grades on those adjacent properties. Water level monitoring appears to show the effects of pumping elsewhere in the district, indicating a district scale interconnectedness.**

**Drilling found for the first-time lithium-bearing brines in the basement Cambrian Campito formation and geochemical and isotopic evidence that the brines have a geothermal affinity. The recognition of lithium potential at depth opens a virgin target for Clayton Valley. The potential may expand even further with testing in the Lower Ash Unit aquifer, a producing horizon elsewhere, that lies atop the Lower Gravel Unit which was the focus of the initial drilling.**

**The Author recommends a US$2,720,000 program of drilling, testing and ground geophysics to advance the Project.**

## 2. INTRODUCTION

**ACME Lithium Inc. is a Canadian registered mineral exploration company domiciled at 318-199 West Pender Street, Vancouver, BC V6E 2R1 and has a wholly owned US subsidiary ACME Lithium US Inc. located at 318 N Carson Street #208, Carson City, NV 89701. The Company is listed on the Canadian Securities Exchange (CSE) under the ticker symbol ACME and in the United States on the OTCQB under the ticker symbol ACLHF. ACME is an exploration stage, pre-revenue company with properties in Esmeralda County, Nevada and in Manitoba, Canada. This report provides updated technical information on the Clayton Valley Project where the Company has an option to acquire and staked 119 placer mining claims totaling approximately 2,230 acres (915 hectares).**

**All measurements are reported in customary US units and currency numbers are in United States dollars. Approximate metric conversions may be shown in parenthesis for convenience.**

**This report has been prepared in accordance with the Canadian Securities Administrators (CSA) NI 43-101. Sources of data for this report are company generated data and publicly published information as referenced. The scope of work includes the results from geophysical work and drilling to date and includes recommendations on further work to advance exploration on the Property including a budget.**

**David Carlson visited the Property in 2024.**

**David Carlson understands that the Issuer will use the Report for internal and reporting purposes.**

**David Carlson is a consulting hydrogeologist with over 44 years of experience at all levels of exploration and development in Oman, Bolivia, Peru, Guatemala, Indonesia and the United States. He is a registered Geologist in California (No. 8309), Idaho (No. 1060), and Utah (No. 7531305-2250). He provides his services through his office in Reno, Nevada.**

# 3. RELLIANCE ON OTHER EXPERTS

**Hydrogeologist Mathew D. Banta PH (Confluence Water Resources LLC, 14175 Saddlebow Drive, Reno, Nevada 89511, 775-843-1908) oversaw planning and permitting for drilling. His report (Banta, M 2023) was relied upon for interpretation of water geochemistry and calculation of the inferred lithium resource. Banta_has over 15 years of technical and professional experience in groundwater and surface water resource development and management. Matt earned a Bachelor of Science degree in Environmental and Natural Resource Science with an emphasis in Hydrology from the University of Nevada-Reno and is a certified professional Hydrogeologist and member of the American Institute of Hydrology.**

**Geophysicist Jim Hasbrouck (Hasbrouck Geophysics, 2473 N. Leah Ln., Prescott, AZ 86301; 928-778-6320) oversaw and conducted the geophysical work. Jim is an internationally recognized geophysicist and is a California Registered Professional Geophysicist, Certificate No. GP 1026. He has over 45 years of experience throughout North and South America, the Caribbean, Africa and Asia conducting geophysical surveys for minerals, water, and environmental purposes.**

**Geologist Nick Barr is an independent consulting geologist with over 40 years of experience supervising and facilitating geological field work, primarily in the southwestern region of the United States including Nevada, Arizona, Idaho, Utah, California and Oregon. Nick holds a Bachelor of Science degree in Geology from Southern Oregon State University, Ashland, Oregon.**

**No other experts were relied upon to produce this report.**

**The claims were staked on Federal lands managed by the Bureau of Land Management Tonopah, NV Field Office following the General Mining Law of 1872. The status and ownership of the unpatented mining claims was checked on the Bureau of Land Management interactive website.**

**The author reviewed and incorporated reports and studies as described within this Report and in the References section.**

**The statements and opinions expressed in this Report are given in good faith and in the belief that such statements and opinions are not false nor misleading at the date of this Report.**

**David Carlson's opinion is provided solely for the purposes outlined in the Introduction section of this report. Mr. Carlson reserves the right, but will not be obliged to, revise this Report and the conclusions therein if additional information becomes known to the author after the date of this report.**

**To the best of the author's knowledge, there are no known environmental liabilities to which the property is subject.**

## 4. PROPERTY DESCRIPTION AND LOCATION

**The Property is in Esmeralda County, Nevada approximately equal distance from both Las Vegas and Reno and about 30 miles west- southwest of the town of Tonopah, the commercial center for the region (Figure 2).**

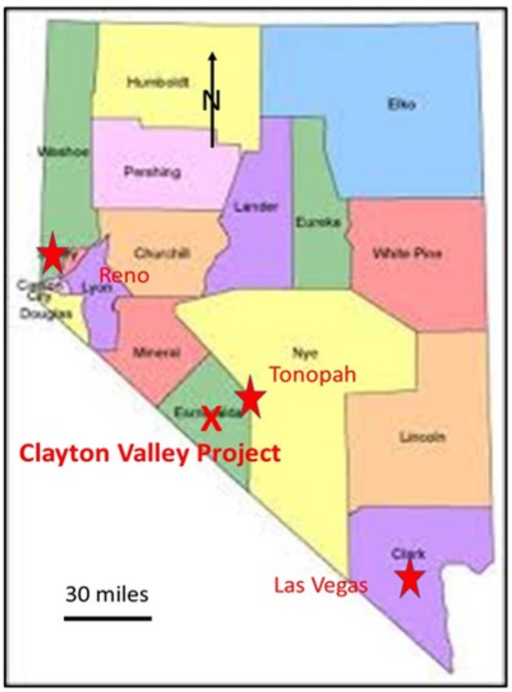


**Figure 2: Location Map**

**The Project claims are in T. 1 S., R. 39 E., Section 36; T. 1 S., R. 40 E., Sections 29, 30, 31 and 32 and T. 2 S., R. 40 E., Section 6. The central longitude / latitude coordinate is -117.5854 / 37.8079.**

**The claims are on the Clayton Valley alluvial plain. They are shown on Figure 2 and tabulated on Table 1. There are a total of 119 unpatented placer mining claims totaling approximately 2,230 acres (approximately 905 hectares) on Federal lands administered by the Bureau of Land Management.**

**Historic drill information and geophysical surveys show the claims cover the basin fill sediments and aquifers similar to the sediments currently producing lithium brines in the region. ACME owns 100% of these claims.**

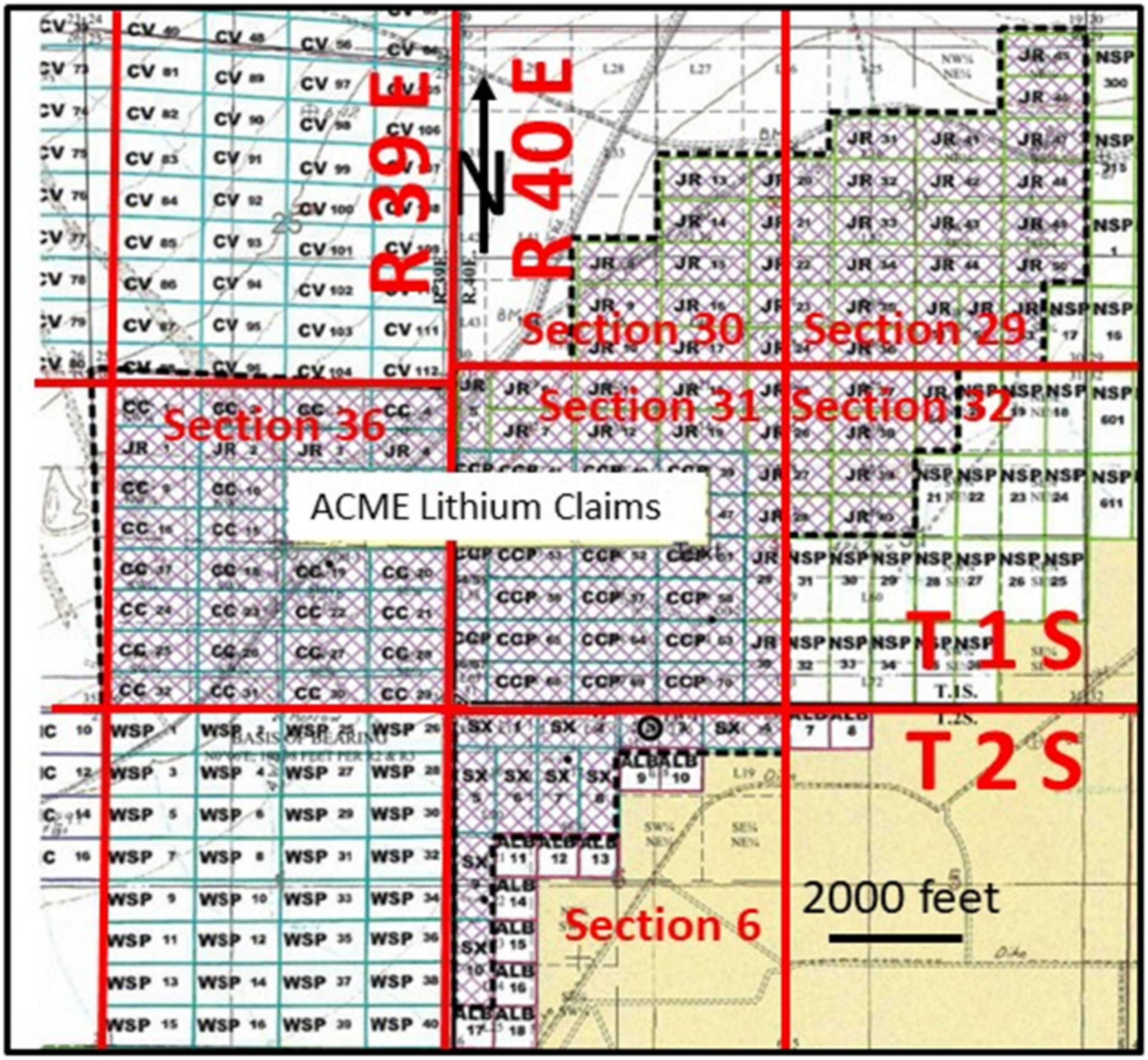


**Figure 3: Claim Map**

| Serial Number | Claim Name | Legacy Serial Number | Date of Location | | Serial Number | Claim Name | Legacy Serial Number | Date of Location | | Serial Numbe | Claim Name | Legacy Serial Number | Date of Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NV101381252 | CC1 | NMC1121249 | 3/20/2016 | | NV101383548 | CCP53 | NMC1121299 | 3/20/2016 | | NV105233247 | JR 15 | NA | 3/5/2021 |
| NV101381253 | CC2 | NMC1121250 | 3/20/2016 | | NV101383549 | CCP56 | NMC1121300 | 3/20/2016 | | NV105233248 | JR 16 | NA | 3/5/2021 |
| NV101381254 | CC3 | NMC1121251 | 3/20/2016 | | NV101383550 | CCP57 | NMC1121301 | 3/20/2016 | | NV105233249 | JR 17 | NA | 3/5/2021 |
| NV101381255 | CC4 | NMC1121252 | 3/20/2016 | | NV101383551 | CCP58 | NMC1121302 | 3/20/2016 | | NV105233250 | JR 18 | NA | 3/5/2021 |
| NV101381256 | CC9 | NMC1121257 | 3/20/2016 | | NV101383552 | CCP63 | NMC1121303 | 3/20/2016 | | NV105233251 | JR 19 | NA | 3/5/2021 |
| NV101381257 | CC10 | NMC1121258 | 3/20/2016 | | NV101383553 | CCP64 | NMC1121304 | 3/20/2016 | | NV105233252 | JR 20 | NA | 3/5/2021 |
| NV101381258 | CC11 | NMC1121259 | 3/20/2016 | | NV101383554 | CCP65 | NMC1121305 | 3/20/2016 | | NV105233253 | JR 21 | NA | 3/5/2021 |
| NV101381259 | CC12 | NMC1121260 | 3/20/2016 | | NV101383555 | CCP68 | NMC1121306 | 3/20/2016 | | NV105233254 | JR 22 | NA | 3/5/2021 |
| NV101381260 | CC13 | NMC1121261 | 3/20/2016 | | NV101383556 | CCP69 | NMC1121307 | 3/20/2016 | | NV105233255 | JR 23 | NA | 3/5/2021 |
| NV101381261 | CC14 | NMC1121262 | 3/20/2016 | | NV101383557 | CCP70 | NMC1121308 | 3/20/2016 | | NV105233256 | JR 24 | NA | 3/5/2021 |
| NV101381262 | CC15 | NMC1121263 | 3/20/2016 | | NV101383552 | CCP63 | NMC1121303 | 3/20/2016 | | NV105233257 | JR 25 | NA | 3/5/2021 |
| NV101381263 | CC16 | NMC1121264 | 3/20/2016 | | NV101383553 | CCP64 | NMC1121304 | 3/20/2016 | | NV105233258 | JR 26 | NA | 3/5/2021 |
| NV101381264 | CC17 | NMC1121265 | 3/20/2016 | | NV101383554 | CCP65 | NMC1121305 | 3/20/2016 | | NV105233259 | JR 27 | NA | 3/5/2021 |
| NV101382402 | CC18 | NMC1121266 | 3/20/2016 | | NV101383555 | CCP68 | NMC1121306 | 3/20/2016 | | NV105233260 | JR 28 | NA | 3/5/2021 |
| NV101382403 | CC19 | NMC1121267 | 3/20/2016 | | NV101383556 | CCP69 | NMC1121307 | 3/20/2016 | | NV105233261 | JR 29 | NA | 3/5/2021 |
| NV101382404 | CC20 | NMC1121268 | 3/20/2016 | | NV101383557 | CCP70 | NMC1121308 | 3/20/2016 | | NV105233262 | JR 30 | NA | 3/5/2021 |
| NV101382405 | CC21 | NMC1121269 | 3/20/2016 | | NV101646629 | SX-1 | NMC1142550 | 5/20/2017 | | NV105233263 | JR 31 | NA | 3/5/2021 |
| NV101382406 | CC22 | NMC1121270 | 3/20/2016 | | NV101647856 | SX-2 | NMC1142551 | 5/20/2017 | | NV105233264 | JR 32 | NA | 3/5/2021 |
| NV101382407 | CC23 | NMC1121271 | 3/20/2016 | | NV101647857 | SX-3 | NMC1142552 | 5/20/2017 | | NV105233265 | JR 33 | NA | 3/5/2021 |
| NV101382408 | CC24 | NMC1121272 | 3/20/2016 | | NV101647858 | SX-4 | NMC1142553 | 5/20/2017 | | NV105233266 | JR 34 | NA | 3/5/2021 |
| NV101382409 | CC25 | NMC1121273 | 3/20/2016 | | NV101647859 | SX-5 | NMC1142554 | 5/20/2017 | | NV105233267 | JR 35 | NA | 3/5/2021 |
| NV101382410 | CC26 | NMC1121274 | 3/20/2016 | | NV101647860 | SX-6 | NMC1142555 | 5/20/2017 | | NV105233268 | JR 36 | NA | 3/5/2021 |
| NV101382411 | CC27 | NMC1121275 | 3/20/2016 | | NV101647861 | SX-7 | NMC1142556 | 5/20/2017 | | NV105233269 | JR 37 | NA | 3/5/2021 |
| NV101382412 | CC28 | NMC1121276 | 3/20/2016 | | NV101647862 | SX-8 | NMC1142557 | 5/20/2017 | | NV105233270 | JR 38 | NA | 3/5/2021 |
| NV101382413 | CC29 | NMC1121277 | 3/20/2016 | | NV101647863 | SX-9 | NMC1142558 | 5/20/2017 | | NV105233271 | JR 39 | NA | 3/5/2021 |
| NV101382414 | CC30 | NMC1121278 | 3/20/2016 | | NV101647864 | SX-10 | NMC1142559 | 5/20/2017 | | NV105233272 | JR 40 | NA | 3/5/2021 |
| NV101382415 | CC31 | NMC1121279 | 3/20/2016 | | NV105233233 | JR 1 | NA | 3/5/2021 | | NV105233273 | JR 41 | NA | 3/5/2021 |
| NV101382416 | CC32 | NMC1121280 | 3/20/2016 | | NV105233234 | JR 2 | NA | 3/5/2021 | | NV105233274 | JR 42 | NA | 3/5/2021 |
| NV101382417 | CCP43/42 | NMC1121282 | 3/20/2016 | | NV105233235 | JR 3 | NA | 3/5/2021 | | NV105233275 | JR 43 | NA | 3/5/2021 |
| NV101382418 | CCP55/54 | NMC1121283 | 3/20/2016 | | NV105233234 | JR 4 | NA | 3/5/2021 | | NV105233276 | JR 44 | NA | 3/5/2021 |
| NV101382419 | CCP67/66 | NMC1121284 | 3/20/2016 | | NV105233236 | JR 5 | NA | 3/5/2021 | | NV105233277 | JR 45 | NA | 3/5/2021 |
| NV101382420 | CCP39 | NMC1121291 | 3/20/2016 | | NV105233237 | JR 6 | NA | 3/5/2021 | | NV105233278 | JR 46 | NA | 3/5/2021 |
| NV101382421 | CCP40 | NMC1121292 | 3/20/2016 | | NV105233235 | JR 7 | NA | 3/5/2021 | | NV105233279 | JR 47 | NA | 3/5/2021 |
| NV101382422 | CCP41 | NMC1121293 | 3/20/2016 | | NV105233238 | JR 8 | NA | 3/5/2021 | | NV105233280 | JR 48 | NA | 3/5/2021 |
| NV101383543 | CCP44 | NMC1121294 | 3/20/2016 | | NV105233241 | JR 9 | NA | 3/5/2021 | | NV105233281 | JR 49 | NA | 3/5/2021 |
| NV101383544 | CCP45 | NMC1121295 | 3/20/2016 | | NV105233242 | JR 10 | NA | 3/5/2021 | | NV105233282 | JR 50 | NA | 3/5/2021 |
| NV101383545 | CCP46 | NMC1121296 | 3/20/2016 | | NV105233243 | JR 11 | NA | 3/5/2021 | | NV105233283 | JR 51 | NA | 3/5/2021 |
| NV101383546 | CCP51 | NMC1121297 | 3/20/2016 | | NV105233244 | JR 12 | NA | 3/5/2021 | | NV105233284 | JR 52 | NA | 3/5/2021 |
| NV101383547 | CCP52 | NMC1121298 | 3/20/2016 | | NV105233245 | JR 13 | NA | 3/5/2021 | | NV105233285 | JR 53 | NA | 3/5/2021 |
| | | | | | NV105233246 | JR 14 | NA | 3/5/2021 | | NV105233286 | JR 54 | NA | 3/5/2021 |

**Table 1: Claims List**

**The claims are located on Federal lands managed by the Bureau of Land Management. As public lands, there is free right of access and both surface and mineral rights are held by the Federal government. Public records and an inquiry in the Tonopah field office show no impairments such as military withdrawals, Wilderness Areas, Wilderness Study Areas or Areas of Critical Environmental Concern.**

**Lithium is a locatable mineral according to the Code of Federal Regulations. Lithium should be located by lode claims where it occurs in bedrock and by placer claims where it occurs in alluvium. A body of legal precedence set during the original development of lithium brines in the area provides that lithium in valley sediments by nature of the unconsolidated nature of the host rock are staked by and produced from placer claims.**

**Placer claims need to conform to the system of public land survey in the area and need to be marked by a monument along the northern border with a location notice.**

**In Nevada the claim staking procedure requires recordings with both the county Recorder's Office and then with the state Bureau of Land Management office in Reno within 90 days of staking the claims.**

**Mining claims on Federal land are held to a September 1 to September 1 assessment year when An Intent to Hold or Proof of Labor document needs to be filed with the county for the annual assessment work. The annual maintenance fee is $165 per claim which must be paid by September 1.**

**All claims are currently listed as active in the BLM system.**

**The permitting process begins with a company filing to do business in Nevada through the Secretary of State's office website, (http://www.nvsos.gov/Modules/ShowDocument.aspx?documentid=609).**

**The process for drilling may involve both the BLM field office in Tonopah, NV and the Nevada State Engineer's office in Carson City, NV.**

**Drilling requires a Notice to be filed with the BLM field office in Tonopah, NV. That needs to include a reclamation cost. Information is available at: (http://www.blm.gov/nv/st/en/prog/minerals/mining.html). There are no Notices filed as of the Report Effective Date.**

**For permitting purposes of the Nevada State Division of Water Resources office (http://water.nv.gov/), it is critical whether a basin on their map is a 'designated' or a 'non-designated' basin. The permitting is completely different depending upon that designation. There are two basins on the Nevada State Engineers map which cover the project: Clayton Valley and Alkali Springs. Both are 'non-designated' basins. Drilling for lithium brines could be interpreted as exploratory drilling for water as long as the scale of water pumped for brine testing is consistent with exploration and not production. No permitting from the Division of Water Resources office would be required for exploratory water drilling. There are no permit applications as of the Report Effective Date.**

**The presence of casing, which can include drill pipe, is important in the regulatory scheme. If no casing whatsoever is used on the hole, then any contractor can drill the hole. If casing is introduced even temporarily, then a licensed Nevada water well contractor needs to drill or at minimum to oversee the drilling and a drill log has to be submitted to the Nevada State Engineers office.**

**The reclamation program for a hole depends upon whether casing is left in the hole. If there was no casing or the casing was pulled, then the hole is considered an abandoned well and can be reclaimed mostly by refilling the hole with cuttings. Reclamation is more complicated if casing is left in the hold. Refer to the NAC 534 regulations on their website (http://www.leg.state.nv.us/NAC/NAC-534.html) with**

**specific reference to paragraphs 534.420. Plugging of Well – General Requirements and 534.4371 Borehole Plugging Requirements.**

**The Project Claims are contiguous to the south with the only lithium brine production operation in North America, NYSE-listed Albemarle's Silver Peak Lithium mine, which has been in production since 1966. In addition, the Project claims are contiguous with Pure Energy Minerals to the east.**

**On May 12, 2021, the Company entered into an option agreement with GeoXplor Corp ("Vendor" or "Operator") to acquire a 100% interest in 64 claims encompassing approximately 1,280 acres, comprising the CC, CCP and SX placer lithium claims (the "Project Claims").**

**ACME may exercise the Option by paying a total of US$283,500, issuing a total of 5,250,000 common shares, and incurring a total of US$2,750,000 in exploration and development expenditures over a four-year period Table 2.).**

| DATE | CASH PAYMENT | COMMON SHARES | EXPENDITURES |
|---|---|---|---|
| Initial Payment | US$83,500 | 750,000 | |
| First Year | US$50,000 | 750,000 | US$250,000 |
| Second Year | US$50,000 | 750,000 | US$500,000 |
| Third Year | US$50,000 | 1,000,000 | US$1,000,000 |
| Fourth Year | US$50,000 | 2,000,000 | US$1,000,000 |

**Table 2: Acquisition Costs**

# 5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHS

## 5.1 Accessibility

**Access to the claims is from US Highway 95, the main highway linking Las Vegas and Reno, NV. About 35 miles west of Tonopah on US Highway 95/6 turn south towards Silver Peak on paved state highway 265. Drive about 18 miles to the Blair historical marker on the west side of the road 3 miles before Silver Peak. Take the good, graded road to the east about 3 miles to the claim area.**

## 5.2 Climate

**The region is arid and almost semiarid. Winters are cold while summers are hot. Weather data is shown on Table 3. Average annual precipitation is 3.1 inches.**

| | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AVG. MAX TEMP. | 43.80 | 53.30 | 66.00 | 68.90 | 80.10 | 90.80 | 97.60 | 93.40 | 81.40 | 69.30 | 60.40 | 43.30 |
| AVG. MIN TEMP | 9.60 | 24.20 | 27.70 | 34.80 | 41.80 | 50.60 | 59.70 | 54.80 | 43.60 | 31.90 | 22.40 | 16.00 |
| AVG PRECIPITATION | 0.53 | 0.12 | 0.84 | 0.63 | 0 | 0 | 0 | 0.11 | 0.29 | 0 | 0.20 | 0.38 |

**Table 3: Average Goldfield, NV Climate**

**Exploration can be conducted year-round but is made more difficult during some winter days by snowfall or winter storms.**

### 5.3 Local Resources

**Goldfield, NV, the county seat, is a nearby town. It has perhaps two hundred inhabitants, cell phone service and a small market. Tonopah has a population of about 2000 and is the governmental and supply center for the region. Groceries, hardware, a bank and a choice of motels and restaurants are available there.**

### 5.4 Infrastructure

**A reasonable network of graded and paved roads connects the claim area to the rest of Nevada.**

**The nearest rail and commercial airline service is to Las Vegas, NV approximately 190 miles to the southeast.**

### 5.5 Physiography

**The claims are located in the Basin and Range physiographic region which stretches from southern Oregon and Idaho to Mexico. It is characterized by extreme elevation changes between linear mountains and flat intermountain valleys or basins. The claims are located on the valley floor alluvial plain at an elevation of about 4265 feet (1300 meters). There is sufficient flat land available for mining facilities needed for a plant recovering lithium directly from a brine.**

**Vegetation is scant and is mainly brushes and grasses such as greasewood and bottlebrush.**

## 6. HISTORY

**There is no known previous exploration or production within the Property area, consequently, there are no known historical mineral resources or reserves. Any work was in the context of wider studies.**

# 7. GEOLOGICAL SETTING AND MINERALIZATION

Clayton Valley is in Nevada hydrogeographic Basin 143. The Clayton Valley hydrogeographic basin, as defined by the Nevada Division of Water Resources (NDWR) covers approximately 557 square miles. The basin is on the western edge of the Basin and Range Province of the Great Basin. The basin is influenced by the Silver Peak-Lone Mountain extensional complex which includes an expanse of extensional structural stepover faults and crosscutting right-lateral strike faults of the Furnace Creek system in the Walker Lane of central Nevada. The structural arrangement of Clayton Valley creates a topographically closed basin environment.

Clayton Valley is geologically bounded to the west and southwest by the Silver Peak Range. The Weepah Hills bound the basin to the north and northeast. Paymaster Ridge bounds the basin to the east and southeast. Quaternary alluvial fans surround the valley floor and extend from basement fault blocks that structurally bound the basin on all sides. Basement rocks are late Neoproterozoic to Ordovician North American western passive margin siliciclastic and carbonate units (Oldow J.S., et al, 1989). During late Paleozoic and Mesozoic orogenies, the region was shortened and subjected to low-grade metamorphism (Oldow J.S., et al, 1989, and Oldow, J.S., et al, 2009), and granitoids were emplaced between 155 and 85 million years ago. Extension continues to the present (Burrus, J.B., et al, 2013; Oldow J.S., et. al., 2009, and Coffey, D.M., et. al., 2021).

The regional geology was an interior continental highland just beginning to be stretched by extensional or pull-apart tectonics during Oligocene time 34 to 23 million years ago. Extension continued during Miocene time (23 to 5 million years ago) causing extensive volcanism, both flows and tuffs, and basins to form, drainages to lead into the basins and deposition of sediments from gravel to clays. The volcanics and sediments deposited on that highland surface are mapped as the Esmeralda formation which hosts the lithium mineralization.

Basin infill consists of alluvial, fluvial, and lacustrine sediments, ash, and materials broken down to clays. Coffey, D.M., et. al., (2021) describes the subsurface sedimentology and stratigraphic correlations from five exploration holes in Clayton Valley (EXP1 through EXP5). These correlations are in general alignment with the subsurface stratigraphy as described by SRK, (2021) and Coffey, D.M., et. al., (2021) suggests the basal and marginal basin sediments consist of alluvial gravel and coarse sand which overlay basement rock. Basement bedrock is described as the Cambrian Campito Formation. Green lacustrine clay with carbonate cement and thin organic rich layers dominates much of the middle basin fill. Fluvio-lacustrine brown and green mud, fine to coarse silt and sand with localized gravel define the middle to upper basin stratigraphy. Thin interbeds of volcanic ash occur throughout the basin. A basin-wide ash layer is observed in the upper basin fill. To the east-northeast halite lenses are interbedded with green clay and occur over an approximately 400 ft (122 m) thick segment.

**Basin fill sediments as described by Coffey et al., (2021) Zampirro, D (2004)) are presented as five stratigraphic units or aquifers defined by composition, lithology, and color. The lithostratigraphic units include the upper clastic unit (UCU), the main ash unit (MAU), the lower clastic unit (LCU), the clastic and ash unit (CAU), the clastic and salt unit (CSU), and the Lower Gravel Unit (LGU). The LGU has been described as the basal gravel or pebble gravels overlaying basement rocks (Blois, M.D. et al, 2017). Further evidence of the basal gravels is documented in the Albemarle 2022 SEC submittal (SRK, 2021). Both reports document the LGU or Lower Gravel Aquifer (LGA) and the MAU as potential exploration targets for high concentration lithium brines in Clayton Valley.**

## 8. DEPOSIT TYPES

**The deposits are brine accumulations in aquifers within Tertiary valley-fill sediments. The target aquifer is the widespread basal conglomerate, which requires drilling through the entire valley fill section. The gravity survey gives some confidence on planning the depth of drilling and the electro-magnetic response of the HSAMT survey allows targeting a conductor which could be the saline brines.**

## 9. EXPLORATION

**Hasbrouck, J., (2021a and 2021b) conducted a gravity and HSAMT survey over the originally leased CC, CCP and SX claims – note the JR claims were added later. The gravity stations were on a nominal 492 feet (150-meter) grid. HSAMT stations were nominally 361 feet (110 meters) apart on traverses with 984 to 1476 feet (300 to 450 meters) spacing.**

**Gravity surveys measure variations of the earth's gravity field. Because gravels, sands and clays are generally less dense than solid rock, they are a way of mapping a sedimentary basin. The results can be mathematically modeled to create a map of estimated depth to bedrock. The gravity surveys suggest differences of depth to bedrock of hundreds of meters (Figure 4).**

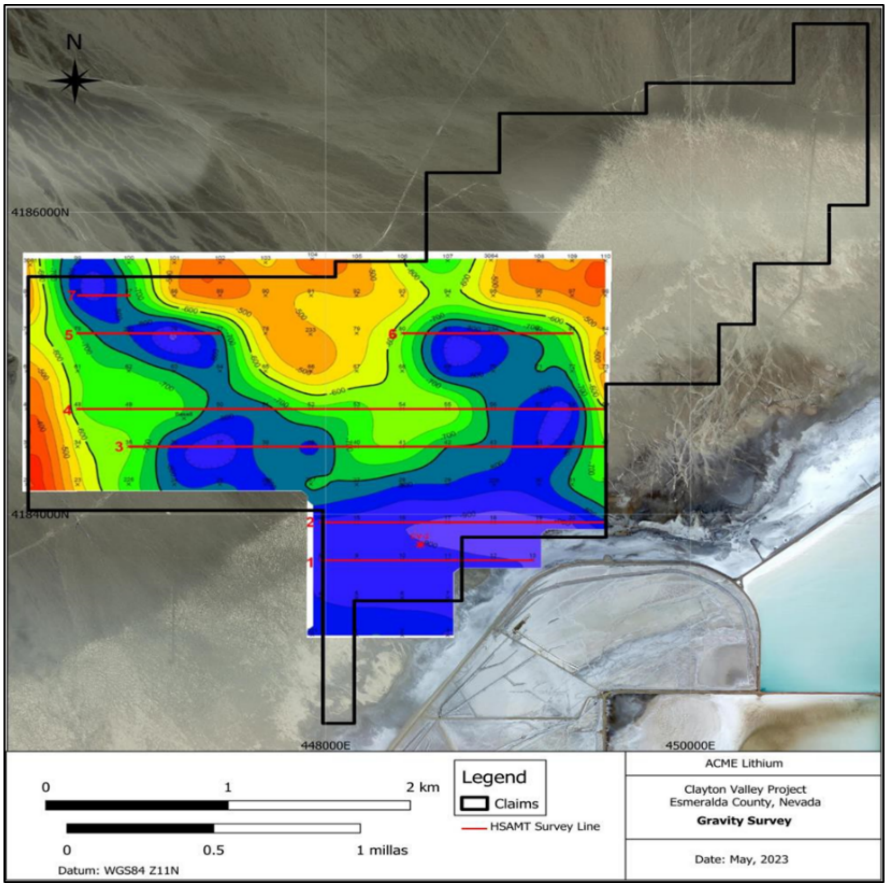


**Figure 4: Gravity Survey**

**Sedimentary basins host the lithium brine deposits at Clayton Valley. Saline brines respond as conductors to electrical fields. Experience in Clayton Valley shows that Hybrid-Source Audio-Magnetotellurics (HSAMT) surveys, also known as Controlled-Source Audio-Magnetotellurics / Magnetotellurics (CSAMT / MT) survey, are a good method for testing for brines. The HSAMT method is designed to investigate from depths of approximately 33 to 3281 feet (10 meters to 1 kilometer,) or greater, depending upon subsurface resistivity values.**

**The purpose of a HSAMT survey is to acquire data at stations selected from the results of the recent gravity survey over the claims and map areas of low resistivity (conductors) thought to be representative of lithium-bearing brine. The gravity map was used to locate traverses for a HSAMT survey as shown by the red lines on Figure 4.**

**The HSMAT results are shown in Figure 4.**

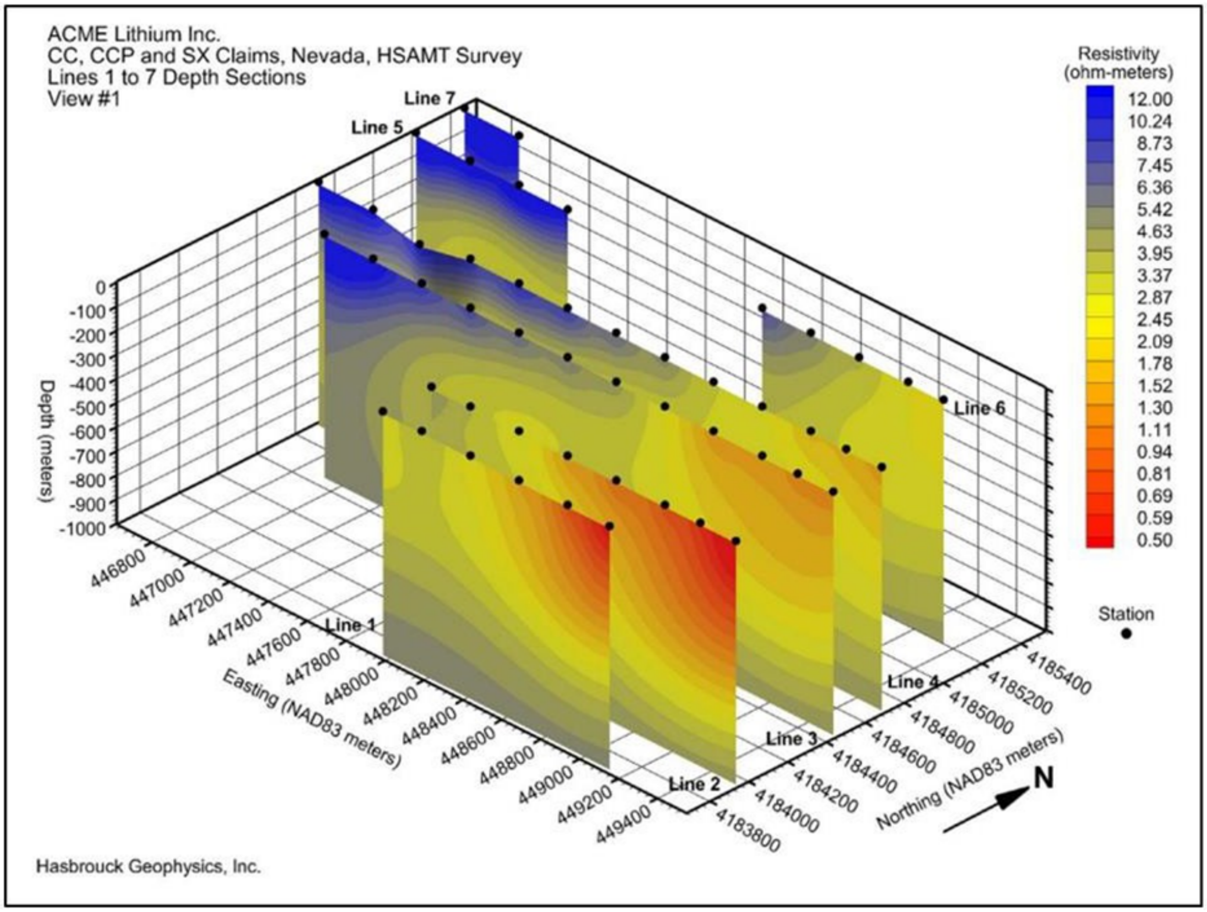


**Figure 5: HSMAT Survey**

The chargeability results fit the model of brines in a basin and can be used for drill hole planning and siting and during resource calculation for estimating the lateral extent of brines. From the results of nearby boreholes and experience in other portions of Clayton Valley, resistivity values less than about 2.5 ohm-meters are interpreted to correlate to zones with increased salinities and/or possible lithium-brine occurrence. Zones with resistivities less than about 2.5 ohm-meters at depths from about 820 to 1476 feet (250 to 450 meters) are interpreted as a basal brine-saturated gravel.

## 10. DRILLING

Two exploration drill holes (DH-1 and DH-1A) and a test well (TW-1), all vertical, have been drilled on the Project. They were located based on the geophysical survey results. Drill locations and information are listed in Table 4 and shown on Figure 6. Because of the proximity of the Property to Albemarles's production, the holes were located by standard distances for pumping tests instead of the more scattered drilling often seen in greenfield drilling.

| HOLE | TYPE | LOCATION | | DEPTH | STATUS |
|---|---|---|---|---|---|
| | | Lat | Long | | |
| DH-1 | Core | 37.8015 | -117.5802 | 1460 ft. | Sampled, tested and abandoned |
| DH-1A | Rotary | 37.8016 | -117.5802 | 1940 ft. | Sampled, tested and VWP installed |
| TW-1 | Rotary | 37.8020 | -117.5799 | 1823 ft. | 7" steel casing installed |

**Table 4: Drill Hole Summary**

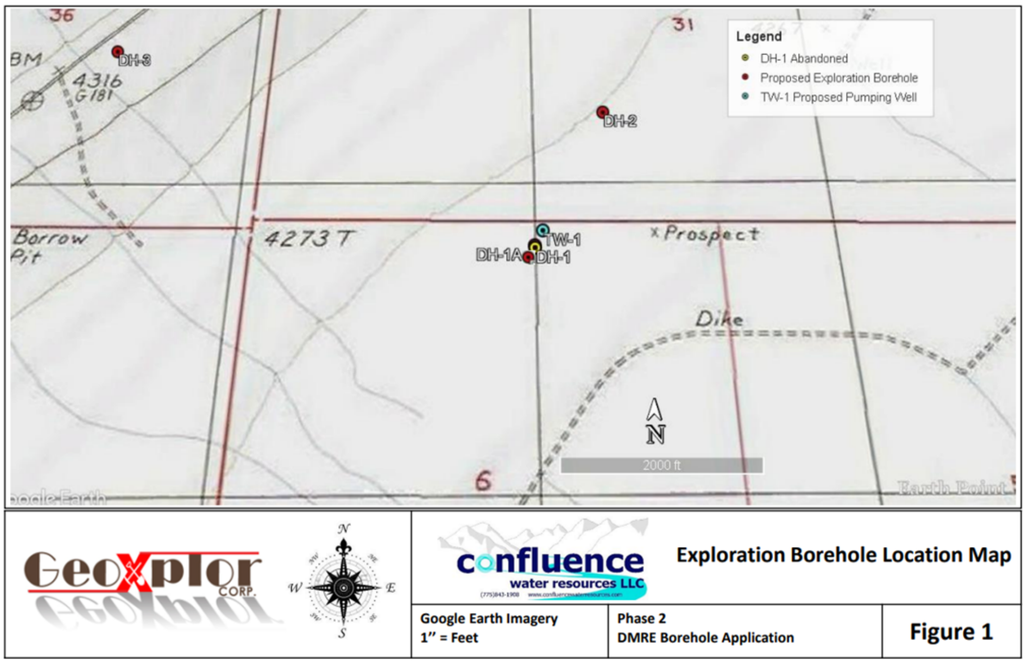


**Figure 6: Drill Hole Location Map**

**Drill Hole DH-1 was intended to be a core hole into the dark carbonates of the basement Cambrian Campito formation. HQ coring with a hole diameter of 2.5 inches was selected for the geological information and to provide intact samples for testing. The hole was successfully drilled through the Lower Ash Unit to 1460 feet and terminated probably because of large boulders.**

**Drill Hole DH-1A twinned DH-1 with the intent to test the complete stratigraphy to basement. The hole was drilled using 8 5/8 inch diameter mud rotary to 1460 feet (445 meters) as the economical alternative through the stratigraphy cored in DH-1 and then used a 7 5/8-inch diameter mud rotary bit and drilled to 1940 feet (591 meters) with drill chips collected for the stratigraphic information.**

**Hole TW-1 was drilled as a 14.75" mud rotary hole to the bedrock contact at 1940 feet (591 meters).**

**Basin fill sediments as described by (Munk, L.A. et al., 2011) are present as five stratigraphic units defined by composition, lithology, and color. The lithostratigraphic units include the upper clastic unit (UCU), the main ash unit (MAU), the lower clastic unit (LCU), the clastic and ash unit (CAU), the clastic and salt unit (CSU), and the lower gravel unit (LGU). The LGU has been described as the basal gravel or pebble gravels overlaying basement rocks.**

**The formation contacts in DH – 1 and DH-1A are:**

- **0 to 181' Upper Clastic Unit (UCU)**
- **181 to 195' Main Ash Unit (MAU)**
- **195 to 479' Lower Clastic Unit (LCU)**
- **479 to 1,180' Lower Gravel Unit LGU/LCU**
- **1,180 to 1,250' Airfall Ash – Lacustrine Tuff (CAU)**
- **1,250 to 1,460' Transition Between LCU/LGU**
- **1,460 to 1805' Lower Gravel Unit LGU**
- **1805 to 1940' Campito fm.**

**Contact depths in TW-1 were within a foot of depths in DH-1/DH-1A.**

**The thickness of the LGU is consistent with the thickness of the basal gravels encountered in Pure Energy Minerals CV-8 and the LGU encountered in core hole EXP-5 located on Albemarle claims approximately 1.25 miles, (2.0 km) from DH-1A (Coffey, D.M., et. al., 2021).**

**Bedding is approximately perpendicular to the core axis in DH – 1 and unit thicknesses are reasonably similar to thicknesses noted elsewhere in the basin. Both suggest horizontal beds and that drill hole thicknesses are very close to true stratigraphic thicknesses.**

**Downhole geophysical wireline logs were completed in DH-1, DH-1A and TW-1. The following provides a summary of the logs completed in each hole.**

**DH-1**
**Borehole deviation**
**Resistivity, fluid conductivity, natural gamma, and temperature**

**DH-1A**
**Borehole deviation**
**Micro-resistivity, natural gamma, fluid conductivity and temperature**
**A nuclear magnetic resonance (NMR) log which provides indications of potential fluid volume, mobile, or capillary bound waters, and estimates of hydraulic conductivity throughout the entire borehole.**

**TW-1**
**Borehole deviation and caliper log**
**Micro-resistivity, natural gamma, fluid conductivity, dual induction, and temperature**

**For DH-1, the API signature of the natural gamma shows a significant increase in conductivity beginning with right defection around at 780 feet (238 meters) bgs (below ground surface). The fluid conductivity gradually increases with depth to the bottom of DH-1, approximately 200,000 us/cm according to the log. The temperature log shows a slight increasing thermal gradient with depth. The temperature deflects right with increasing temperature near the lower ash around 1190 feet (363 meters) bgs and continues to increase with hole depth.**

**Surveys completed in DH-1A were like those completed in DH-1. The caliper log completed in DH-1A, prior to packer testing, indicated there were no major washouts. The natural gamma API was like DH-1, however exhibited a more pronounced right shift, increasing between 1190 and 1250 feet (363 and 381 meters) bgs in the lower ash unit. The increase in API may correspond to an increase in potassium salts and may not be indicative to increase in brine conductivity or TDS. Micro resistivity of DH-1A slightly deflects left, reduces, in the vicinity of the lower ash. The resistivity spikes, increases, in small areas, presumably fractures at 1475 and 1570 feet (450 and 479 meters) bgs. Below 1570 feet (479 meters) bgs, several left deflections occur signifying decrease in resistivity to the bottom of the borehole. Fluid conductivity increases with depth to the bottom of the borehole. The laboratory analytical results are consistent with the geophysical log, indicating fluid conductivity is lowest above the lower ash around 220 feet to 1190 feet (67 to 363 meters) bgs and increases in the LGU.**

**Water quality analytical results from samples collected in DH-1, DH-1A and TW-1 testing conform with the results of the downhole resistivity surveys which indicate lower electrical conductivity and potential freshwater influx in the upper aquifers above the lower ash.**

**The NMR log from DH-1A provides estimates of total fluid volume by fraction of clay bound fluid, capillary bound fluid, and mobile fluid. The highest fractions of capillary and mobile fluid appear higher in the borehole, 320 feet to 1190 feet (98 to 363 meters) bgs, with the highest fractions appearing in the lower ash, approximately 1190 to 1250 feet (363 to 381 meters) bgs. From the NMR log, capillary bound fluid (i.e. matrix bound fluid) appears to dominate through the majority of the lower ash. Mobile and capillary bound fluid significantly decreases in the LGU to the bottom of the hole to the contact with bedrock. The hydraulic conductivity estimated by SDR and SOE from the NMR log are reflective of the mobile fluid signature. From 320 feet to 1,190 feet (98 to 363 meters) bgs the hydraulic conductivity values are generally over 1 ft/day. In the lower ash, 1,190 to 1,250 feet (363 to 382 meters) bgs, the hydraulic conductivity increases to over 10 ft (3 m)/day according to the log, then decreases in the LGU to 1 ft (0.3m)/day or less. The hydraulic conductivity values calculated from the TW-1 pumping test are within the same magnitude of the values estimated by the NMR survey in the LGU but are not consistent with the NMR estimates in the lower ash. The temperature survey is like that of DH-1, showing a slight increase in temperature with depth.**

**The dual induction and natural gamma logs from TW-1 clearly show the lower ash overlaying the LGU from 1185 to 1250 feet (361 to 381 meters) bgs. The dual induction shows this zone to increase in long and short spacing conductivity. The long and short space conductivity significantly decreases in the LGU below 1250 feet (381 meters) bgs. Micro resistivity, and temperature logs are consistent with the DH-1A log. The caliper log from TW-1 showed a washout near the bottom of the TW-1 steel surface conductor casing around 280 feet (85 meters) bgs. This zone was cemented upon completion of the well.**

**The contact with the lower ash/tuff unit and the LGU appears to be distinguishable from the downhole geophysical logs. The resistivity, fluid capillary and mobile fluid volume appear to be consistent with the laboratory analytical results with exception of the NMR estimated hydraulic conductivity of the lower ash/tuff unit. For this, the hydraulic conductivity estimated from the TW-1 pumping test data is preferred. However, geophysical logs still can be used to infer conductivities and the signature of the LGU.**

**Profile sampling through all aquifers indicates potential for interaction with lower conductivity waters in the upper aquifers above the lower ash/tuff contact. The same is also indicated based on the HSAMT survey showing higher resistivities along shallow zones in the western fringes of the ACME Project area. Downhole geophysical surveys indicate the electrical conductivity increases with depth which was confirmed by the results of the brine sampling program. The results of the program do not show a direct correlation between lithium concentration and electrical conductivity but does indicate a proportional relationship may exist with increase in total dissolved solutes approaching the basal pebble gravels or lower gravel unit (LGU) which overlays bedrock. The HSAMT survey indicates the resistivity increases in bedrock which was validated by the results of brine sampling from the DH-1A (1,840 - 1,880 feet, 562 to 573 meters) bedrock packer test. Results from this test suggest the lithium concentrations near the bedrock contact may be lower than expected and highest in the lower ash and LGU.**

**Both core and formation fluids were sampled in DH-1.**

**The HQ core was selectively spot hand sampled for laboratory analyses. There are several projects in the Clayton Valley area with lithium values in mudstones exceeding 1000 ppm lithium (see 23. Adjacent Properties). Twelve (12) samples were collected and submitted to an independent laboratory for geochemical analyses (Table 5).**

| Footage | Li ppm | B ppm | Co ppm | Cu ppm | Pb ppm | Sc ppm | V ppm | Al % | Ca % | Fe % | K % | Mg % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 72 | 260 | 90 | 10 | 20 | 12 | 4 | 70 | 2.21 | 3.39 | 2.45 | 1.19 | 1.39 |
| 190 | 30 | 10 | 1 | 3 | 2 | <1 | 9 | 0.23 | 0.89 | 0.27 | 0.13 | 0.22 |
| 256 | 90 | 50 | 7 | 12 | 8 | 3 | 43 | 1.60 | 3.22 | 1.68 | 0.68 | 0.58 |
| 339 | 300 | 180 | 10 | 23 | 12 | 6 | 90 | 4.01 | 4.26 | 2.88 | 3.21 | 1.22 |
| 546 | 40 | 20 | 7 | 9 | 10 | 3 | 42 | 1.47 | 1.92 | 1.84 | 0.69 | 0.79 |
| 595 | 10 | 10 | 1 | 2 | 2 | <1 | 7 | 0.2 | 0.07 | 0.2 | 0.15 | 0.05 |
| 768 | 30 | 20 | 5 | 8 | 7 | 1 | 40 | 1.12 | 2.08 | 1.41 | 0.4 | 0.34 |
| 979 | 30 | 10 | 5 | 8 | 9 | 2 | 34 | 0.98 | 7.20 | 1.54 | 0.39 | 0.34 |
| 1089 | 40 | 10 | 6 | 9 | 9 | 2 | 41 | 1.19 | 7.20 | 1.87 | 0.37 | 0.75 |
| 1193 | 40 | 10 | 1 | 3 | 2 | 1 | 12 | 0.32 | 0.14 | 0.9 | 0.23 | 0.11 |
| 1245 | 40 | 20 | 1 | 1 | 4 | 1 | 7 | 0.97 | 0.06 | 0.27 | 1.87 | 0.08 |
| 1357 | 30 | 30 | 7 | 29 | 9 | 4 | 61 | 1.30 | 8.90 | 2.41 | 0.58 | 0.72 |

**Table 5: Geochemical Analyses**

**The high lithium value of 300 ppm is economically insignificant but is certainly geochemically anomalous. Based on visual inspection, the following elements have weak geochemical patterns which mirror the lithium: cobalt, copper, lead, scandium, iron and magnesium. Aluminum may be a function of clays. Calcium could be a product of an arid basin or an alteration within a geothermal system.**

**Fifteen (15) samples of core were collected and prepared for laboratory analysis of Specific Yield, Field Water Capacity, and Porosity. Specific yield or drainable porosity (Sy) is the amount of solution that can be released from a saturated rock under gravity drainage conditions. Total porosity (Pt) is the ratio of pore volume to bulk volume. Mean values ranged from 0.22 to 0.38. The specific yield (Sy) mean values were 0.06 – 0.16 and, at 120 mbars, 0.04 – 0.05. The values are a check that the brine carrying assumptions for the sediments are reasonable when calculating reserves/resources.**

**The rapid brine release and Specific Yield analyses suggest the Specific Yield of the LGU is approximately 6% based on the mean value of the core tested and up to 18% in the lower ash based on mean value. As such, a (Sy) of 6% was assumed in the inferred resource evaluation for the ACME Lithium Project.**

**Solid PVC casing was installed from 0 to 200 feet (0 to 61 meters) and perforated three-inch (7.6 cm) diameter PVC well casing was installed from 200 feet to 1,460 feet (61 to 445 meters) bgs. The perforations allow formation fluids to flow through the casing.**

**Those fluids were sampled using passive hydra-sleeve sampling method within the perforated casing. The results show potentially economic lithium values below 1150 feet (351 meters). The analyses are plotted on Figure 7.**

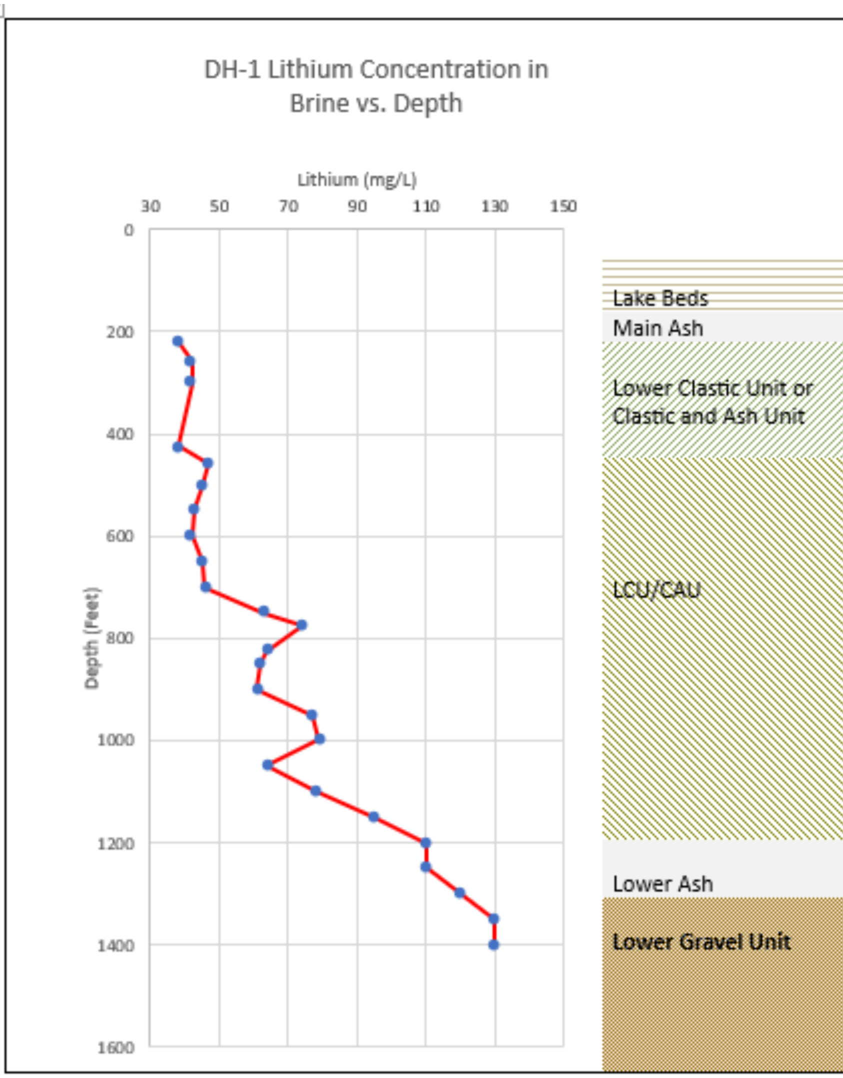


**Figure 7: Hydra-Sleeve® Sampling Results**


**Figure 8: Brine Samples**

**Downhole wireline logs and geophysical surveys were completed through the PVC casing for hole deviation, natural gamma, fluid conductivity and temperature. The sum of all observations from drilling and downhole geophysical surveys indicated fresh water may be present to 800 feet bgs transitioning to a strong brine occurrence at approximately 850 feet (244 meters) bgs, with electrical conductivity and total dissolved solids concentrations increasing with depth to 1460 feet (445 meters) bgs (total depth). Following sampling and logging, the PVC casing was pulled, and the hole abandoned per Nevada regulations.**

**A straddle packer uses hydraulic sleeves to isolate an interval and formation fluids are pumped from within that interval. The intent had been to sample across the lower gravels in DH-1A. Unfortunately, the packer equipment was lost down the hole early in the program. Results of the one sample are shown in Table 6.**

| ELEMENT | 1840'-1880' |
|---|---|
| Boron | 10 |
| Boron Dissolved | 15 |
| Lithium | 77 |
| Lithium Dissolved | 72 |
| Magnesium | 700 |
| Magnesium Dissolved | 670 |
| Strontium | 73 |
| Strontium Dissolved | 70 |

**Table 6: Packer Brine Analyses**

**Particularly noteworthy geologically is the 1840-1880 feet (562 to 573 meters) sample which is the first demonstration in Clayton Valley of lithium brines in the Campito formation under the Tertiary sediments.**

**The packer interval was also used to gather hydrological measurements. Airlift pumping to remove formation fluids also simulated pumping and recovery data were recorded on the downhole pressure transducer. That recovery data was used to calculate hydraulic conductivity and transmissivity of the formation tested. The water-level recovery data were analyzed using two methods (Theis straight line recovery and Hvorslev's methods). Hydraulic conductivity describes the ease with which a water or brine can move through the pore space or fracture network. Transmissivity is the rate of flow under a unit hydraulic gradient through a unit width of aquifer of given saturated thickness. Hydraulic conductivity is 0.30 – 0.54 feet/day and transmissivity is 12.3 ft2/day.**

**Tests also indicated the hydraulic conductivity of the upper portion of the bedrock near the contact with the LGU is approximately 0.50 feet (15 cm) per day.**

**After packer sampling, piezometers were installed in DH-1A and grouted in place at 590, 1220 and 1550 feet (180, 372, and 472 meters) to monitor changes in hydrostatic pressure and assess the potentiometric surface of the LGU, lower ash, and LCU and gravel units overlying the lower ash.**

**Hole TW-1 was drilled as a 14.75-inch (37 cm) diameter mud rotary hole to the basement at a depth of 1,823 feet (556 meters) with the bore hole cuttings collected for geologic logging. The hole was cleaned of drilling fluids by swabbing and airlifting and down hole caliper and E-Log and deviation surveys were run, and perforated steel casing installed from 1823 feet to 1296 feet (556 to 395 meters).**

**The well was designed to isolate the LGU aquifer from overlying aquifers. A 7-inch (18 cm) steel well casing was installed with 3 X 1/136" double perforations from 1800 feet to 1296 feet. The hole annulus was filled with gravel from 1823 to 1,296 feet (556 to**

**395 meters) with bentonite to 23 feet (7 meters) and cement to the surface. Drill fluids were removed by surge airlifting and swabbing the perforations and the well was ready for testing. Field chemical parameters monitored to ensure removal of drilling fluids were the following: pH, Specific Conductance (SC), Total Dissolved Solids (TDS), Temperature (T) and Oxidation/Reduction Potential (ORP).**

**The pumping test was designed to estimate transmissivity and storativity of the LGU within limitations of the TW-1 DMRE well permit. The DMRE well permit limits the discharge to 5 Acre Feet total discharge. Additional discharge limitations were required as a condition of the Nevada Division of Environmental Protection (NDEP), Temporary Discharge Permit for the project. Both permits restricted the pumping discharge rate to less than 100 gallons per minute (gpm), not to exceed 144,000 gallons per day or 5 Acre Feet total discharge from the well.**

**DH-1A was completed with grouted-in piezometers to monitor changes in hydrostatic pressure and assess the potentiometric surface of the LGU, lower ash, and LCU and gravel units overlying the lower ash encountered in DH-1A. Water level measurements generated from the piezometers were used for the following purposes.**

- **Examine vertical gradients between aquifers encountered at the ACME project.**
- **Identify potential transient changes in water levels due to regional pumping.**
- **Measure response to local pumping from TW-1 with primary objective to estimate transmissivity and storativity of the LGU.**

**Figure 9 shows the DH-1A piezometer trends prior to well development activities and pumping at TW-1.**

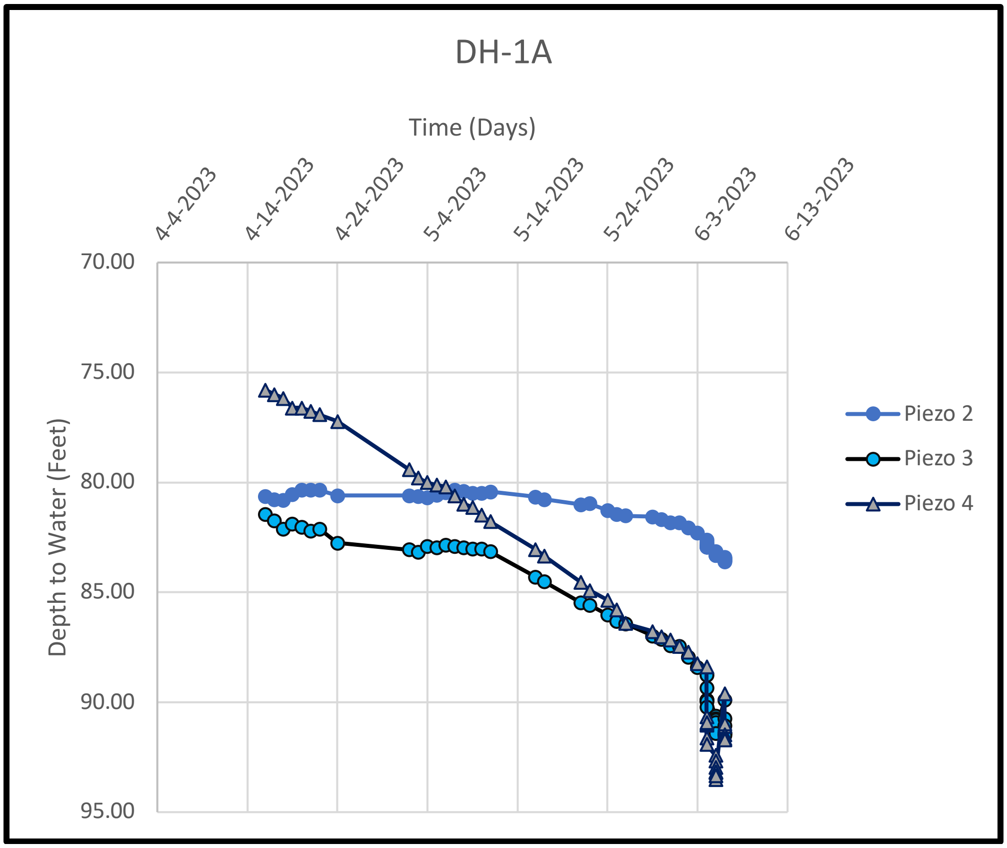


**Figure 9: Water Level Trends**

**The generally downward and converging trends of the deeper two piezos (3 and 4) suggest an interconnectedness and the downward trend to the right suggests the effects of pumping elsewhere in the district – a district scale interconnectedness. The effects of the airlift pumping in TW-1 clearly show for piezos 2 and 3 but is very muted in piezo 1, suggesting the lower stratigraphy is an interconnected aquifer as opposed to the separate pattern in piezo 2. That is not uncommon in stratigraphic sections where a clay aquitard layer separates aquifers.**

**The pumping test program included the following.**

- **Collection over 7 weeks of background water level data from TW-1 and from DH-1A**
- **Completion of a step drawdown test of TW-1**
- **Completion of a 10-day constant rate discharge test of TW-1**
- **Collection of post pumping test aquifer recovery data from TW-1 and DH-1A over 10 days**

**The above testing used the drill rig pump at a constant rate. A variable rate pump was installed for a step-drawdown test which is a pumping-test designed to test well performance under controlled variable discharge conditions. The discharge rate in**

**the well is increased from a low constant rate through a sequence of intervals of progressively higher constant rates.**

**Step drawdown testing (Figure 10) was used to evaluate well efficiency, specific capacity, and the optimal rate for the pumping test and determine well losses and the effective radius of a well. Numbers for each characteristic are calculated from data points and line plot slopes. Aquifer or formation loss arises from the resistance of the aquifer matrix to fluid flow. Aquifer loss is proportional to discharge and increases with time as the cone of influence expands. Well loss represents the loss of head that accompanies the flow through a well screen, gravel pack and in the casing. Well loss is proportional to the square of the discharge and is independent of time.**

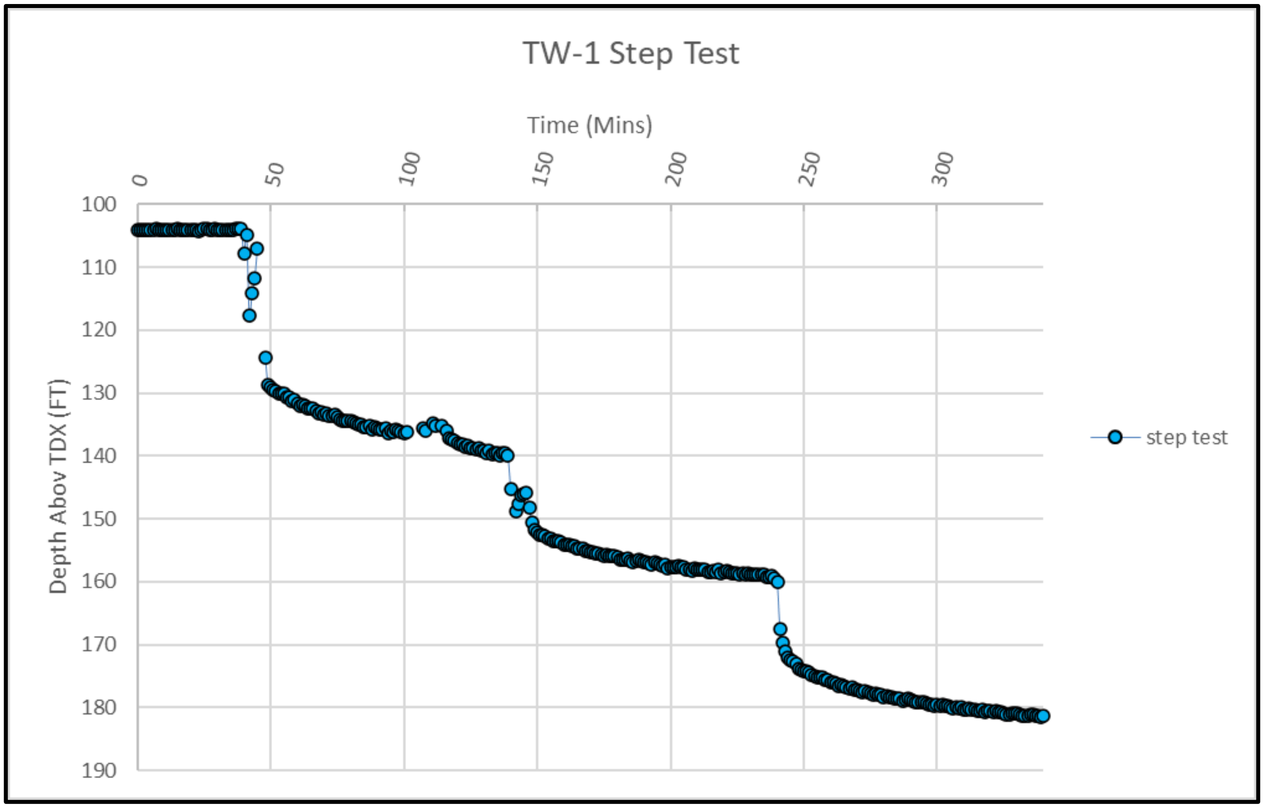


**Figure 10: TW-1 Step Drawdown Test**

**Following the step test, a 10-day duration, 94 gallon per minute (gpm) constant rate pumping test was completed (Figure 11). Drawdown was monitored in the pumping well in addition to the drawdown response propagated to DH-1A from pumping TW-1. Calculated transmissivity and hydraulic conductivity values are listed in Table 7.**

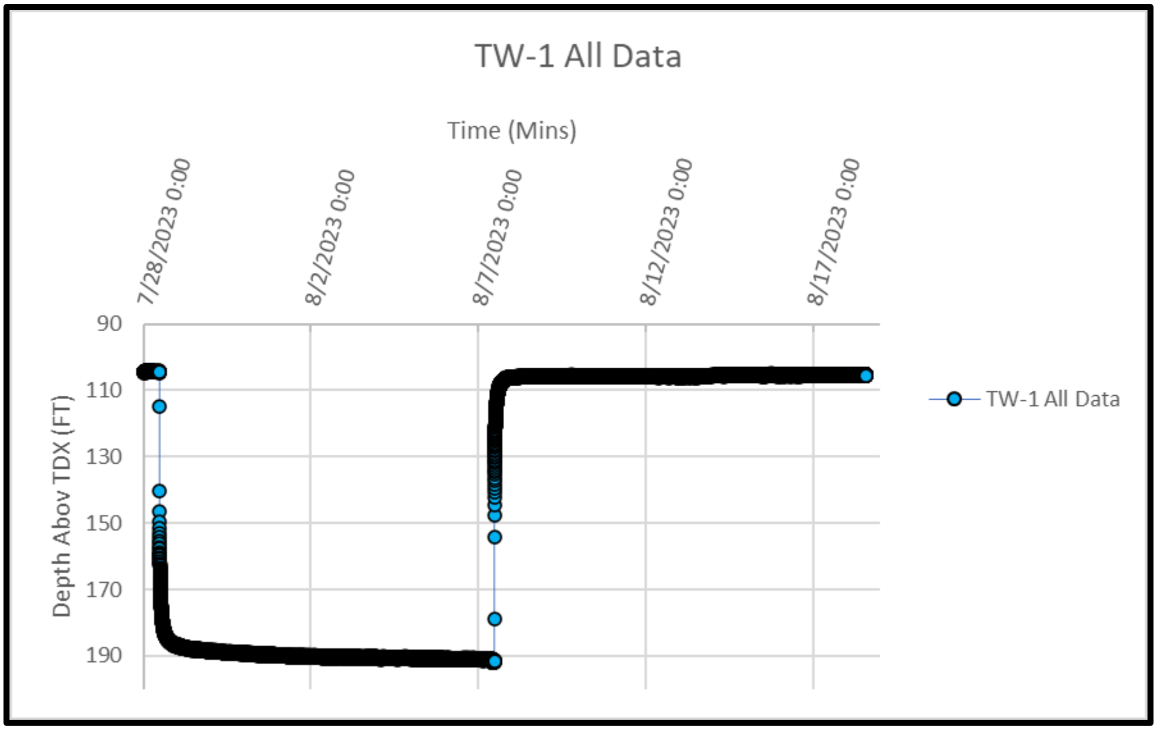


**Figure 11: Constant Rate Pumping Test**

| Data | Solution | Transmissivity ($FT^2$/Day) | Hydraulic Conductivity (FT/Day) |
|---|---|---|---|
| Drawdown | Cooper-Jacob Straight Line | 740 | 1.3 |
| Recovery | Theis Straight Line Recovery | 578 | 1.05 |

**Table 7: Calculated Transmissivity and Hydraulic Conductivity**

**AQTESOLVE software was used to interpret the data with generally good results.**

**In addition to drawdown and recovery data collection from the testing, brine samples were collected daily from the pumping test discharge for chemical analysis. Twenty-five water samples were collected from DH-1, two (2) samples were collected from DH-1A, and 11 samples were collected from TW-1 discharge. Multiple duplicate samples were collected for QA/QC between laboratory procedures and analytical methods.**

**The ultimate goal of exploration and development is to assign an accurate grade to a mineral accumulation. The key to that is lots of analyses including re-analysis of the same sample by the same laboratory using the same material, re-analyses using the same material camouflaged with a different sample number, re-analyses by a different**

**laboratory using the same method and re-analyses by a different laboratory using a different technique. ACME incorporated all.**

**As discussed in section 11 Sample Analyses, three laboratories were used: WET Labs, ALS and Alpha and three techniques were tried: SW-846, EPA 200.7 and EPA 200.8. Some report in parts per million (ppm) and some report in milligrams/Liter (mg/L) which is ppm adjusted for density. Some report lithium, which is total lithium, and some report dissolved lithium where the sample is analyzed after filtration to remove lithium attached to clay particles or held in tiny colloidal clusters. Analyses included boron which are not discussed for simplicity because the numbers are not significant.**

**The nature of things is there always is variability. There are statistical tests for variability, but a reasonable rule of thumb is 10% or above is excessive. There are single sample variations which require re-analyses of that sample to resolve and systematic variations which require much more investigation.**

**Table 8 shows samples collected from DH-1A with samples analyzed by WET Labs by the EPA 200.7 method with check samples analyzed by ALS using the SW-846 method. Clearly there are systemic differences. WET Lab analyses were used for further interpretation because they have the most experience with Clayton Valley brines and Albemarle uses WET Lab values in reporting to the EPA. However, as evaluation moves forward, ACME needs to understand the discrepancies with their brines.**

**The number of samples is so small that statistical tests are not that meaningful. Still, you can gain confidence just looking at the numbers. The spread between total lithium and dissolved lithium is a reasonable visual test of variability. Only sample TW-1-8 fails that test.**

**Table 9 shows primary and check analyses from WET Lab and Alpha Lab for samples from DH-1A and TW-1. The numbers generally are in good agreement.**

| DH-1 Sample | WET Lab EPA 200.7 ppm | ALS SW-846 ppm |
|---|---|---|
| Airlift | 71 | |
| Hydrasleeve 220' | 38 | |
| Hydrasleeve 260' | 42 | |
| Hydrasleeve 300' | 42 | |
| Hydrasleeve 425' | 38 | 33 |
| Hydrasleeve 460' | 47 | |
| Hydrasleeve 500' | 45 | |
| Hydrasleeve 550' | 43 | |
| Hydrasleeve 600' | 42 | |
| Hydrasleeve 650' | 45 | 36 |
| Hydrasleeve 700' | 46 | |
| Hydrasleeve 750' | 63 | |
| Hydrasleeve 775' | 74 | 38 |
| Hydrasleeve 825' | 64 | |
| Hydrasleeve 850' | 62 | |
| Hydrasleeve 900' | 61 | 50 |
| Hydrasleeve 950' | 77 | |
| Hydrasleeve 1000' | 79 | |
| Hydrasleeve1050' | 64 | 36 |
| Hydrasleeve 1100' | 78 | |
| Hydrasleeve 1150' | 95 | |
| Hydrasleeve 1200' | 110 | 62 |
| Hydrasleeve 1250' | 110 | |
| Hydrasleeve 1300' | 120 | |
| Hydrasleeve 1350' | 130 | |
| Hydrasleeve 1400' | 130 | 77 |

**Table 8: Hole DH-1A Primary and Check Analyses**

| Sample | Source | WET LAB EPA 200.7 mg/L | | Alpha Lab EPA 200.8 mg/L | |
|---|---|---|---|---|---|
| | | Total Li | Dissolved Li | Total Li | Dissolved Li |
| DH-1A 1880-1840' | Packer | 77 | 72 | not run | not run |
| DH-1A 1880-1840' | Duplicate | 71 | not run | not run | not run |
| TW-1 | Air Lift | 110 | not run | not run | not run |
| TW-1-1 | Pump Test | 100 | 100 | not run | not run |
| TW-1-2 | Pump Test | 100 | 100 | 80 | not run |
| TW-1-3 | Pump Test | 88 | 92 | 71 | not run |
| TW-1-4 | Pump Test | 87 | 89 | 74 | not run |
| TW-1-5 | Pump Test | 88 | 83 | 81 | 81 |
| TW-1-6 | Pump Test | 97 | 97 | 89 | 77 |
| TW-1-7 | Pump Test | 100 | 97 | 86 | 84 |
| TW-1-8 | Pump Test | 98 | 100 | 75 | not run |
| TW-1-8 | Duplicate | 88 | 75 | not run | not run |
| TW-1-9 | Pump Test | 100 | 99 | 77 | not run |
| TW-1-10 | Pump Test | 94 | 91 | 78 | 84 |
| TW-1-11 | Pump Test | 95 | 99 | 69 | 78 |

**Table 9: DH-1A Primary and Check Analyses**

**Other tests provide useful information about water. Eleven primary and two duplicate samples from the three drill holes were analyzed for the Nevada 1 profile group of elements: alkalinity as CaCO3, bicarbonate, total alkalinity, chloride, fluoride, nitrate as N, total nitrate as N, pH, sulfate, total dissolved solids, aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, copper, iron, lead, magnesium, manganese, mercury, potassium, selenium, silver, sodium, thallium, uranium and zinc. The following were added: electrical conductivity, fluid density, silica, silver, sulfur, boron and lithium, bismuth, gallium, lanthanum, molybdenum, nickel, strontium, thorium, vanadium and tungsten.**

**The multi-element water quality analytical results were evaluated using a Piper Plot Diagram, which graphically displays the percent relative composition of major cations (Ca, Mg, Na, K) and anions (Cl, SO4, HCO3, CO3) in solution, to categorize the water chemistry (Figure 12). The chemical composition of the water sample reflects water-rock interactions and/or anthropogenic (human activities) contamination and indicates the hydrochemical facies (dominant ions, water type). All samples are sodium potassium and chloride type waters. The water quality of the brine encountered at the ACME Project categorizes well with the brine and hot spring water quality affinity shown in the Piper Plot Diagram (Figure 12) of Coffey, D.M., et. al., 2021. Total nitrogen values up to 4.3 mg/L also support a hot springs / geothermal source.**

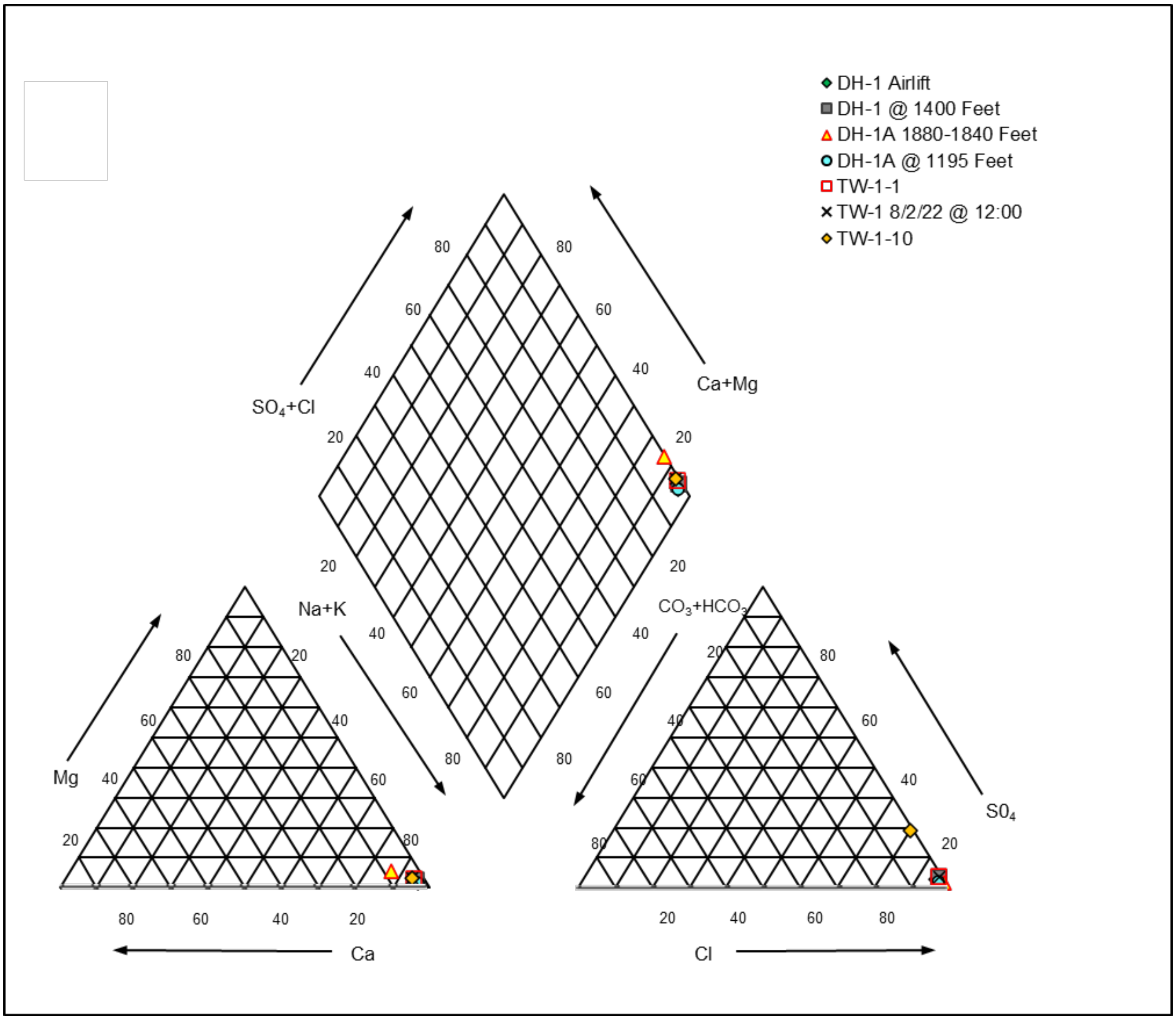


**Figure 12: Piper Plot Diagram**

**Isotope analyses are useful in interpreting the geologic history of a water. While the absolute numbers of oxygen and hydrogen (deuterium) isotopes varies globally in**

**snow or rain waters with factors such as a snowy, humid or arid climate, their ratio stays in a relatively tight range. When plotted, those values graph as a well-defined sloping line. The exact plot varies whether considering global, regional or local analyses, but the ratio remains relatively constant and, hence, the slopes of the plots remain relatively constant.**

**Waters which have circulated thru the earth or sourced from molten rocks have different ratios. Hydration of silicate minerals (e.g., reaction of water with feldspars and hornblende to form clays) lightens oxygen 18 and increases deuterium. Since rocks are enriched in oxygen 18, isotopic equilibration with them at elevated temperature shifts the data points to the right in the evolution of deuterium and oxygen 18 in geothermal waters as a function of temperature during reaction with host rocks. Rocks tend to be strongly enriched in oxygen 18. The more energetic (hotter) the system, the more readily the rocks oxygen 18 is exchanged with the water. Cooler temperatures remove less oxygen 18 from the rocks. However, deuterium seems to behave in the opposite manner. This is probably because hydrogen is sparse in primary silicates. As these react, they form hydrous minerals such as phyllosilicates. As solid phases, these would tend to enrich in the heavier hydrogen isotope, (Clark. I.B. and Fritz, P., 1997).**

**Carbon 14 and tritium analyses can give indications of relative ages.**

**Brine samples were collected for analysis by ISOTECH Labs of deuterium, oxygen 18, tritium, and carbon 14 by percent of modern carbon as standard practice to evaluate the hydro-chemical footprint of the aquifers encountered. Brines collected from the following stratigraphic units:**

***DH-1A (1880 to 1840 feet, 573 to 561 meters) packer test in bedrock.**

***DH-1A @ 1195 feet, 364 meters, open borehole airlift above lower ash unit.**

***TW-1-10, sample collected on day 10 of the TW-1 pumping test from the LGU.**

**Figure 13 shows the oxygen and hydrogen isotope analyses plotted against the Global and Nevada Meteoric Lines showing that they have the signature of waters such as geothermal / hydrothermal waters which have reacted with their enclosing rocks.**

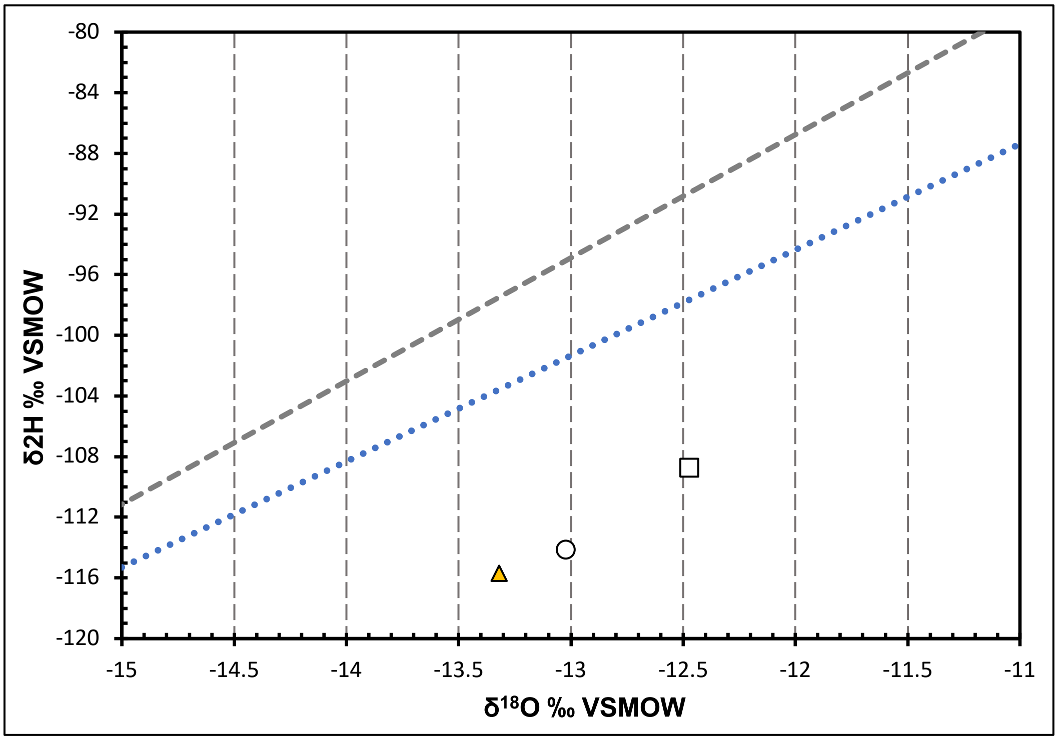


**Figure 13: Plot of Oxygen and Deuterium Analyses**

For all samples, tritium content of water is below 1.0 TU indicating the water has been in storage since before nuclear testing in southern Nevada.

The results of laboratory testing Carbon 14 of water are summarized below:

- DH-1A (1880 to 1840 feet) 14C = 12.04 percent modern carbon
- DH-1A @ 1195 feet 14C = 4.1 ± 0.1 percent modern carbon
- TW-1-10 14C – 0.9 ± 0.0 percent modern carbon

Although the results are not conclusive, they provide indication of the potential residence time of the groundwater in the respective aquifers from which they were collected. The percent modern carbon in the sample collected from the TW-1 pumping test in the LGU aquifer is lower than that of the samples collected from the aquifers above and below the LGU. This provides evidence that some of the oldest waters in Clayton Valley may reside in the LGU.

## 11. SAMPLE PREPERATION, ANALYSES AND SECURITY

This Section presents the methods for collection of water quality samples which were submitted to a Nevada Certified Laboratory for analysis of elemental lithium and

**Nevada Profile 1 chemical parameters. Physical measurements, sample collection and preparation procedures were completed in accordance with the Guidance Document for the Design and Construction of Groundwater Monitoring Wells and Approved Monitoring and Sampling Methods, Nevada Division of Environmental Protection – Bureau of Mining Regulation and Reclamation (NDEP/BMRR, 2018, NRS 534.020 and 534.110). The sampling procedures described below are consistent with these methods.**

**All brine and water quality samples were collected by CWR or the GeoXplor geologist under direct oversight from CWR. Groundwater samples were collected using the following sampling: methods:**

- **HydraSleeve®, composite passive sampling.**
- **Inflatable packer system.**
- **Evacuation of multiple wellbore volumes via airlifting.**
- **High flow sampling from a pumped well.**

**Water quality samples were collected via HydraSleeve® at multiple intervals from DH-1 as described in Section 6.1. Groundwater samples were collected using dedicated HydraSleeve® samplers set at a specific depth based on the logged stratigraphy from the DH-1 core hole. HydraSleeve® groundwater samplers are considered instantaneous grab sampling devices designed to collect water samples from groundwater wells without purging or mixing water from other intervals. HydraSleeve® samplers are made from a collapsible tube of polyethylene, sealed at the bottom end, and built with a self-sealing reed-valve at the top end. The HydraSleeve® samplers were installed empty into the water column where hydrostatic pressure keeps the device closed except during sample collection. The sampler device was deployed to a specific sampling depth in the temporary well screen as described in Section 6.**

**Following sampler deployment, the sampler was left in place long enough for the well water, contaminant distribution, and flow dynamics to restabilize after the minor vertical mixing caused by the installation of the sampler. Literature from the manufacturer suggested 15-20 minutes was sufficient time for stabilization within the well column. To initiate sample collection, the HydraSleeve® was pulled upward through the sample zone (or 1.0 to 1.5 times the sampler length) at a rate of one foot per second or faster. The reed valve at the top opens as the sleeve is pulled through a "core" of water, and the sleeve expands to contain the sample. Once the sample sleeve is full, the self-sealing reed-valve closes, preventing loss of the sample or the entry of extraneous fluid as the HydraSleeve® is recovered. At the surface, the HydraSleeve® can be punctured with the pointed discharge straw and the sample transferred to the bottle sets (following filtering, if required) for transport to the laboratory. The empty HydraSleeve® were disposed. Hydra Sleeves are single use sampling devices and cannot be reused. Sample preparation, preservation, handling, and shipping was conducted in accordance with the procedures described in the following text.**

**Airlift packer testing was done by first fitting the packer arrangement drop pipe with a diverter head, and then inserting an air line (3/4" tremie pipe) through the head and into the drop pipe. The depth of the air line was calculated to give maximum submergence while remaining within air compressor range. For each airlift test, a data-recording pressure transducer was lowered into the drop pipe attached to or enclosed within the bottom of the air line. The top of the air line was fitted with a high-pressure air hose from the compressor, and a discharge hose was attached to the diverter head. The zone isolated test was completed in the basement Campito formation underlying the LGU from 1,880 feet to 1,840 feet (573 to 561 meters) bgs. The packer equipment was lost downhole at the second sample attempt, ending the effort.**

**Airlift water quality samples collected from DH-1A above the bedrock contact are indicative to a composite sample of the overlying aquifers and are not zone isolated across the respective aquifers encountered. The results of these test are anecdotal to the water quality footprint of the aquifers overlying the bedrock and LGU. Airlift testing then proceeded by injecting air at about 150 to 200 cubic feet per minute (at standard pressure – scfm) down the airline. Upon exiting the airline, air bubbles rise in the water column, entraining and lifting water through the wellbore and out the packer drop pipe. Water is thereby "pumped" out of the test interval. The volume of water pumped in this manner was measured by directing the air/water discharge into an open-top drum of known volume while recording the time to fill the vessel. Airlift "pumping" was continued until chemical field parameters met the conformance criteria. Brine samples were collected daily from TW-1 pumping test discharge water. A grab sample was collected through sampling ports built into the well discharge line at the well head. Daily sampling began once chemical field parameters met the conformance criteria.**

**Brine samples were handled as follows.**

**Coolers filled with sample bottles containing required preservatives were shipped to the sampler. Upon receipt of the sample coolers, the samplers inspected the sample containers. If any of the preservatives leaked, the project manager and/or laboratory were notified. If the bottles were not used immediately, the bottles were stored cool. This was taken into consideration on hot days when the sample bottles are kept in warm vehicles.**

**The sample containers were packaged in separate polyurethane bags representing the total number of samples requested. The sample containers and preservative type were identified by colored labels. Raw/unpreserved container types did not have a colored label. Except for RAW container types, each container has a preservative specific to the analyses requested.**

**The containers were not rinsed, and care was taken not to lose any of the preservative when filling containers with samples (i.e., do not let the bottes overflow during filling). Some samples collected for inorganic constituents were field filtered either at the**

**sampling location or immediately upon returning to a safe/sheltered location, if weather conditions were problematic.**

**Filtering for dissolved metals was achieved using a peristaltic or hand pump, dedicated well pump and dedicated Teflon tubing, and disposable 0.45-micron field filters. If the sampler was unable to perform the filtration in the field, it was documented in the field notes and both the project manager, and the laboratory contact was notified so that the samples were properly filtered when they arrived at the laboratory. For this program, the laboratory was required to filter samples when weather, equipment, or other sampling conditions preclude the sampler from filtering in the field. Filtering is not required for total metals analysis. Filtering for dissolved metals analysis was completed prior to HNO3 preservation.**

**All sample bottles were labeled with the provided labels for the samples using a waterproof marker; completed labels were covered with clear tape to prevent any damage from water. For each label, the project name, sample location and sample interval (e.g., "DH-1A @ 1400 feet"), sample date and time, and sampler's initials. The labels were marked to indicate whether the sample was filtered or not. Samplers made sure all bottle caps were tight for packing and any debris from the outside of the containers was cleaned. Sample sets were placed back into the original polyurethane bag. The samples were cooled to 0ºC to 4ºC using ice packs, or bagged ice, and placed upright in a similar configuration within the cooler provided. Once samples were collected, a chain of custody (COC) form was completed for the sampling event.**

**Samplers were instructed to return samples to the analytical laboratory within the required holding time for the analyses. Holding time for pH was not achievable due to the remoteness of the project. The hold time for total dissolved solids (TDS) analysis is 7 days from the time of sampling. Therefore, all samples arrived to the laboratory within at least 5 days of the sampling time/date. Samples were hand delivered or shipped out via overnight delivery within the same day or two of sample collection. All samples were cooled and maintained at a temperature of 0ºC to 6ºC for return shipment. Ice was double bagged in Ziploc bags to prevent leakage during shipment. As such, use of a cooler as a shipping container was recommended. A signed copy of the COC was placed in each shipping cooler before the shipping cooler was sealed. The COC was placed in a plastic bag to prevent damage in case of leakage. For security purposes the use of custody seals (CS) was utilized. The CS was applied to the sample cooler and cooler lid when samples were shipped or delivered to the laboratory. The condition of the seal upon receipt is indicative if the cooler has been tampered with during the time in transit. The CS was applied on the opening side of the container, signed, and dated, and covered with clear packing tape. Upon receipt of the shipped cooler at the lab, any damage would be reported, the temperature was measured, and the samples were logged into the laboratory using the COC. Cooler shipped were sent via overnight shipping to the analytical laboratory using the provided shipping labels. The laboratory was notified when a cooler was in transit.**

**Duplicate samples were collected in accordance with the sampling procedures described above. Duplicate samples were submitted to separate independent laboratory for QA/QC between laboratory procedures and analytical methods. Duplicate samples were labeled in accordance with the sample location and sample interval (e.g., "DH-1A @ 1400 feet"), sample date and time, and sampler's initials. Decontamination supplies including approved cleaning solutions, paper towels, brushes, etc. were on site during sampling. Appropriate nitrile gloves were worn during sample collection; gloves were changed between samples and prior to decontamination of any equipment. The use of airlift equipment, dedicated pumps, HydraSleeve samplers, tubing, and filters reduced the amount of time spent on decontamination. Any non-dedicated or single-use sample containers or equipment, including the water level probe, would be decontaminated between each sampling event by wiping or scrubbing off soil or other foreign material, washing with a laboratory grade detergent (Liquinox or equivalent)/clean-water solution, and rinsing with tap water followed by a final rinse with distilled or deionized water.**

**Logbooks, COC forms, sample collection forms, and digital camera were used for sample documentation. SDS forms for preservatives were also required to be carried during sampling. Field notes were maintained in a notebook containing records of all field calibrations performed during the sampling event. The field notes include details of the sampling event (personnel on site, date/times), site conditions (weather, road conditions, other site activities), sampling equipment (HydraSleeves, pumps, flow meters, filters, etc.), and any other relevant details of the sampling event. Sample collection field forms were used to document sample collection protocol, water levels, flow rate (if applicable), field parameters, sample bottles collected, etc.**

**Water quality samples were analyzed by WET Laboratory in Sparks, Nevada. Duplicate samples were analyzed by Alpha Analytical Inc. in Sparks, Nevada, and ALS Environmental in Fort Collins, Colorado. Each has their internal QAQC controls. All labs have only the normal commercial client relations with ACME, GeoXplor and the Author.**

**Western Environmental Testing Laboratory (WETLab), 475 E. Greg St. Suite 119, Sparks, NV 89431, 775-355-0202. The Sparks facility has EPA certificate NV009252023-3.**

**Alpha Analytical Inc., 255 Glendale Ave. #21, Sparks, NV 89461, 775-355-1044. The lab follows ISO 1700 protocols.**

**ALS Environmental, 225 Commerce Dr., Ft. Collins, CO 80524, 970-490-1511. The lab is ISO 14001 and 45001 certified.**

**Approved EPA preparation techniques followed by ICP analyses were used. The EPA publication SW-846, entitled Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, is Waste's official compendium of analytical and sampling methods that have been evaluated and approved for use in complying with**

**the RCRA regulations. SW-846 functions primarily as a guidance document setting forth acceptable, although not required, methods for the regulated and regulatory communities to use in responding to RCRA-related sampling and analysis requirements.**

**Method 200.7: Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry**

**Method 200.8: This method provides procedures for determination of dissolved elements in ground water, surface water and drinking water. It may also be used for determination of total recoverable element concentrations in these water as well as wastewaters, sludges, and soils samples.**

**Where too few samples were involved to make duplicate sampling reasonable, the laboratory's own QAQC samples were used or where duplicate analyses are not reasonable such as physical measurements of porosity, the laboratory's professional reputation sufficed.**

**Core sampling was much simpler. The piece(s) of core was removed, wrapped in film if needed, a wooded block explaining the sample purpose was placed in the gap, the sample was placed in a marked sample bag and shipped with appropriate documentation.**

**Analyses were by ALS Geochemistry, 4977 Energy Way, Reno, NV 89502. The facility is ISO 14001 and 45001 certified. Standard preparation followed by ME-ICP41 analyses for multi-elements and Li-OG63 for uranium were used.**

**In the Author's opinion the procedures described above for sample preparation, security, and analytical procedures are adequate for the purposes of this report.**

## 12. DATA VERIFICATION

**The Property being on an alluvial valley plain covered in fine air and water transported material does not lend itself to sampling related to mineralization. The Author took no check samples during the field exam. He relied on internal controls at accredited laboratories and a sense of reasonable values built on experience.**

**The Author feels the data is adequate for the purposes of this report.**

## 13. MINERAL PROCCESSING AND METALLURIGCAL TESTING

**There has been no mineral process nor metallurgical testing of brines from the Project to date.**

## 14. MINERAL RESOURCE ESTIMATES

**An inferred resource of 302,890 metric tonnes of lithium carbonate equivalent (LCE) based on a 40-year pumping life is calculated for the Property.**

**A Mineral Resource (CIM, 2014) is a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.**

**Mineral Resources are sub-divided, in order of increasing geological confidence, into inferred, indicated and measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.**

**An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve.**

**An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources can only be used in economic studies as provided under NI 43 101.**

**Mineral resources that are not mineral reserves do not have demonstrated economic viability. The results of current exploration and potential quantity and grade of proposed exploration targets identified in the Report are conceptual in nature and it is uncertain if further exploration will result in the exploration target being delineated as a mineral resource and there is no guarantee that these resources, if delineated, will be economic or sufficient to support a commercial mining operation. It is uncertain that it will be established that these resources will be converted into economically viable mining reserves. Until a full feasibility study has been completed, there is no certainty that these objectives will be met.**

**The analyses to date and evidence for district interconnectedness suggests the production record of Albemarle and the Pure Energy Metals' Preliminary Economic Assessment support the initial assessment that the Property brines are potentially of economic interest.**

**The inferred resource was calculated assuming the average concentration of lithium within this potential reserve is approximately 96 mg/L. This is based on the numerous samples, duplicate and QAQC analyses of multiple samples collected by different methods from three drill holes. This is comparable to other reported grades in the district. All observations support the lithium being very uniform across the thickness. The resource is calculated only for the Lower Gravel Unit or LGU. The thickness of that unit is about 525_feet (160 meters) based on DH1 – A and TW-1. The LGU is a recognized layer in northern Clayton Valley and that thickness is consistent with published data. Numeric values assigned to variables characterizing the unit were based on laboratory testing such as for drainable porosity, specific yield and storativity and on this report's pumping data for hydraulic conductivity, transmissivity and storativity. All are reasonably within the expected ranges.**

**The outer limits of the resource were selected from the geophysical surveys using a combination of gravity low and HSAMT response (Figure 14). The water levels monitored during pumping appear to show a connectivity to active pumping elsewhere in the district. That supports this Report's assumption of lateral continuity as reasonable.**

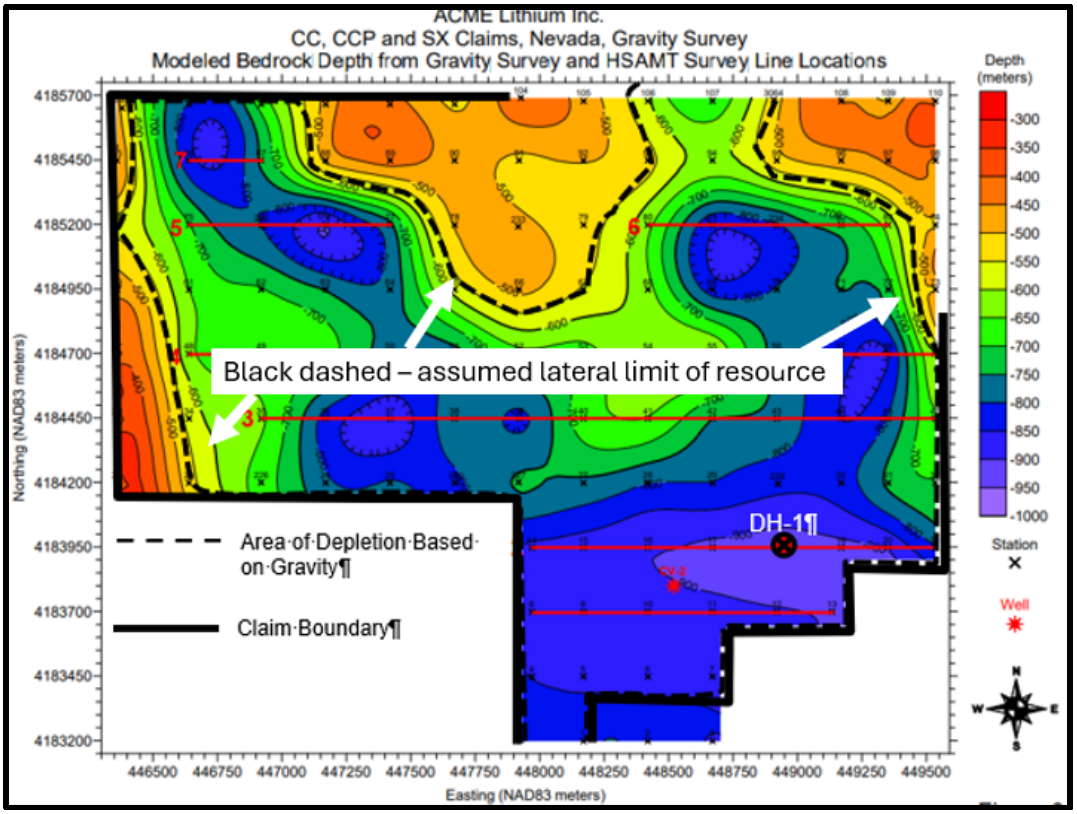

Figure 14: Brine Limit Selected from Geophysics

This evaluation uses the concept of the Transitional Storage Reserve (TSR) for Clayton Valley as introduced in the 1968 Water Resource Recognizance report (Rush, F.E., 1968). The State of Nevada uses the concept in its regulation of ground water. The Transitional Storage Reserve (TSR) has been defined as the quantity of water in storage in a particular groundwater reservoir that can be extracted and beneficially used during the transition period between natural equilibrium conditions and new equilibrium conditions under the perennial yield concept of groundwater development.

The TSR is estimated as the Area of Depletion x Thickness to be Dewatered x Specific Yield. The area of depletion is defined as the area to be dewatered, and the thickness of the aquifer (saturated thickness) is defined as the thickness to be dewatered. The Specific Yield (Sy) is defined as the volume of water that could be released from storage in an unconfined aquifer per unit surface area, per unit decline of the water table, i.e., drainable porosity.

The concept of TSR is highly variable and cannot be fully depended upon to predict the volume of releasable brine over time. Factors or variables are only generally known. A robust groundwater flow model substantiated with a density of high-quality data, which include site specific geologic, structural, and measured hydraulic conductivity, transmissivity, and storativity is required to accurately estimate storage

**coefficients and potential response to pumping throughout the entire ACME Project area.**

**Still, TSR is widely used to make inferences to define the potential extent of a lithium brine resource and the concept can be applied to provide an estimate of TSR as it affects the ACME Project without use of a high-level groundwater model. Using it arguably makes the ACME data more comparable to other estimates.**

**The TSR for the LGU at the ACME Project is estimated to be approximately 33,000-acre feet. The yearly pumping rate to deplete the aquifer (Rush, F.E. et al, 1968) can be calculated using the TSR, time and perennial yield assuming 40 years. The estimated total volume of extractable brine from the LGU over a 40-year period is approximately 473,000-acre feet or approximately 11,825-acre feet per year. A pumping rate of approximately 7,331 gpm must be achieved from the LGU aquifer within the ACME Project area to dewater the LGU over 40 years.**

**The results indicate at least 145 feet of drawdown would occur 1-mile from an individual well, pumping at a rate of 1,000 gpm over 40-years. There are many assumptions with the solution and a numerical groundwater flow model substantiated with additional data is required to sufficiently predict pumping response from simulated pumping centers within the ACME Project area. However, based on the depth of the LGU and available drawdown to the bottom of the LGU, this suggests there would be potential for the basal gravels in Clayton Valley to yield rates of over 1,000 gpm (gallon per minute) from a single large diameter well, and plausible to develop a well field that yields in aggregate up-to 7,331 gpm or 11,825-acre feet per year within the ACME Project area, assuming the entire aquifer would be dewatered.**

**The estimate of extractable elemental lithium based on total extractable volume from TSR over 40 years is approximately 56,902 Metric Tons (units rounded). A factor of 5.323 has been assigned to convert elemental lithium to lithium carbonate equivalent (LCE) based on industry wide common conversion factors. The inferred LCE is estimated to be approximately 302,890 Metric Tons (units rounded).**

**The ACME property footprint overlays the geologic layers where the inter-basin flow from Lower Big Smoky (Tonopah Flat) basin flows into Clayton Valley as groundwater. The U.S.G.S. report prepared for the Nevada Division of Water Resources (Report No. 45) indicates that potentially 13,000 acre-feet/year flows in Clayton Valley, underneath the ACME property footprint. This amount of water on a yearly basis has the potential to dilute the lithium brine which exists under the Property footprint.**

**Finally, the amount of LGU lithium brine water that can be pumped will require a water rights permit from the Division of Water Resources for each production well. Currently Albemarle has all the groundwater rights within Clayton Valley in their possession.**

## 15. MINERAL RESERVE ESTIMATES

**There is no mineral reserve estimate.**

## 16. MINING METHOD

**Besides the obvious choice of production by pumping, the Project is too early to stage.**

## 17. RECOVERY METHODS

**For environmental, economic and recovery reasons a Direct Lithium Extraction (DLE) is expected to be used. Testing to begin selection of the exact process has yet to start.**

## 18. PROJECT INFRASTUCTRE

**The Property benefits from being immediately adjacent to Albermarle's producing operation which has road access and electrical power.**

## 19. MARKET STUDIES AND CONTRACTS

**The lithium market is global. Totals vary from group to group, but all agree it will grow to meet green energy demand. Grand View Research (https://www.grandviewresearch.com/industry-analysis/lithium-market, accessed 2.10.24) places the 2023 global lithium market at $8.20 billion and expect it to grow by 12.8% compound from 2024 to 2030.**
**MMR (https://www.maximizemarketresearch.com/market-report/global-lithium-market/29596/ accessed 2.10.24) figured the 2022 world market was $3.95 billion and would grow 6.8% annually through 2029.**

**There have been no Property-specific studies or analyses, including relevant market studies, commodity price projections, product valuations, market entry strategies, or product specification requirements. Identify any contracts material to the issuer that are required for property development, including mining, there have been no initial discussion needed for Property development contracts for refining, transportation, handling, sales and hedging, and forward sales contracts or arrangements.**

## 20. ENVIROMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

**There are currently no known environmental studies that have taken place on or are specific to The Property.**

**There are no known environmental issues currently aside from ground water extraction. Ground water in Nevada is regulated by allocations applied for with the Nevada Division of Water Resources (NWDR). Water rights can be purchased from an existing user in fully allocated basins. Clayton Valley is Nevada hydrogeographic Basin 143, as defined by the NWDR covers approximately 557 square miles. ACME plans to use Direct Lithium Extraction (DLE) to extract the lithium brine discovered on The Property. DLE is a proven technology which innovates traditional lithium extraction methods and optimizes the extraction of lithium from brines by an environmental and economic metric. The use of DLE will considerably cut down the amount of ground water needed for this program as traditional brine pumping and the use of evaporation ponds has been proven to cause groundwater levels to decrease. After lithium recovery, the remnant brine would be injected into the ground, obviating the need for waste or tailings disposal.**

**Permitting is required for ground water extraction and is regulated by allocations applied for with the Nevada Division of Water Resources (NWDR). Water rights can be purchased from an existing used in fully allocated basins.**

**ACME currently holds a Dissolved Mineral Resource Exploration Well Permit from the Nevada, Commission on Mineral Resources, the permit was approved on December 19, 2022, and expires 2 years after the date of approval. The permit approves a 5-acre**

**foot limit of pumped water for the entire project. A 50-acre foot permit would be needed to successfully extract the lithium brine from the property.**

**There are no social or community related requirements as Silver Peak, where The Property is located, is in an isolated village with lithium production being the only opportunity.**

## 21. CAPITAL AND OPERATING COSTS

**There has been no estimate of capital and operating costs.**

## 22. ECONOMIC ANALYSIS

**There have been no economic analyses made of the Project.**

## 23. ADJACENT PROPERTIES

**The Clayton Valley area has several lithium brine Properties in production or development and lithium mudstone projects in exploration or development.**

**Additionally, there are three known geothermal resource areas and a long history of hard rock mining for metals (Figure 15).**

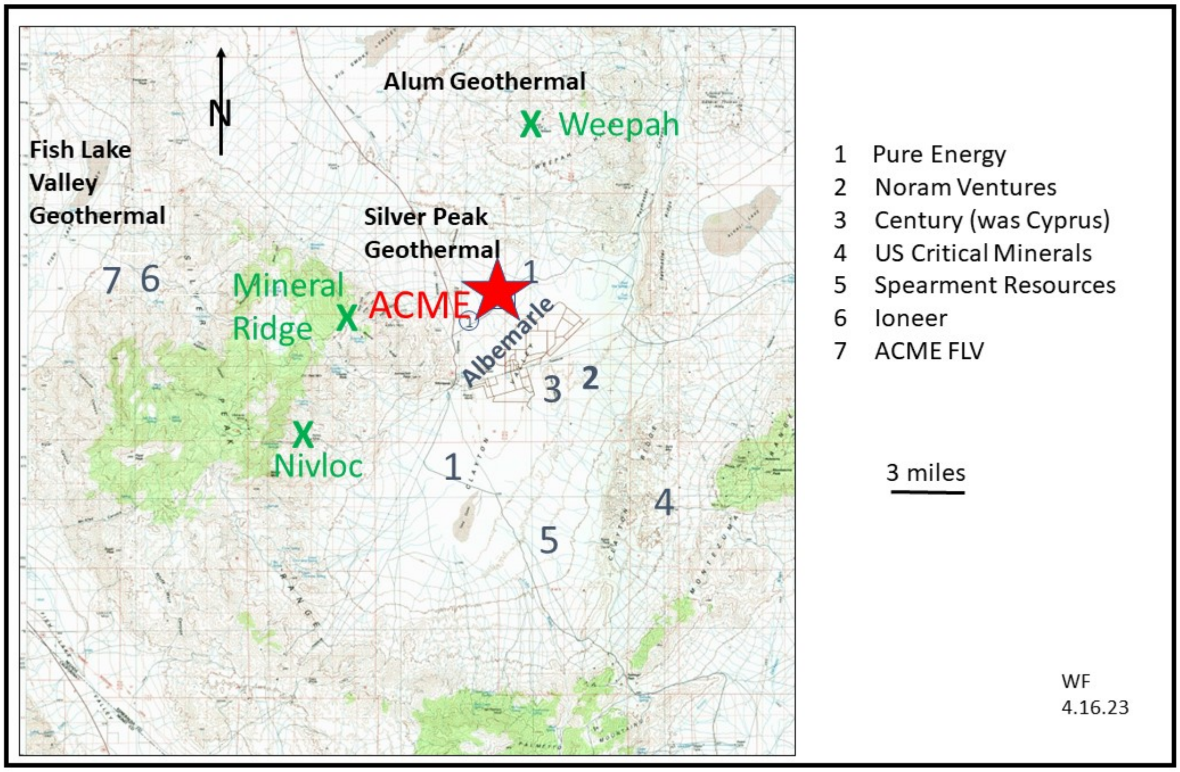


**Figure 15: Adjacent Properties**

**Albemarle is the current operator of the Silver Peak lithium brine operation which has been in production since 1966. In 2021, they announced they would invest $20-30 million to double production by 2025(https://www.albemarle.com/news/albemarle-announces-expansion-of-nevada-site-to-increase-domestic-production-of-lithium accessed 2.19.24).**

**1. SLB with Pure Energy has constructed onsite a Direct Lithium Extraction (DLE) demonstration facility using the Tennovo Process. Pure Energy has announced an inferred lithium brine resource of 217.7 kTonnes LCE @ 123 mg/L lithium (Molnar, R. et al, 2018).**

**2. Noram Ventures on their Zeus Property has published a measured and indicated clay mineral resource of 1040 million tonnes @ 937 ppm lithium and an inferred mineral resource of 236 million tonnes @ 869 ppm (Cuckor et al, 2023).**

**3. Cyprus Development Corp. (now Century Lithium) has released an indicated and inferred clay resource of 1,540 million tonnes @ 885 ppm Li (Fayram, TS et al, 2021). Century has acquired the adjacent Enertopia ground with an indicated resource of 82 mt @ 1,121 ppm Li and an inferred resource of 18 mt @ 1,131 ppm Li (press release of June 15, 2022).**

**4. US Critical Minerals has initial clay samples up to 950 ppm Li (Johansing, RJ, 2021)**

**5. Spearment Resources on their McGee Property has published an indicated clay resource of 320 million tonnes @ 803 ppm Li and an inferred resource of 157 million tonnes @ 865 ppm (https://www.spearmintresources.ca/projects/mcgee-lithium-clay-deposit/ accessed 12/20/23).**

**7. Ioneer has published total measured, indicated and inferred claystone resources at Rhyolite Ridge of 360 million tonnes at 1,750 ppm and 6,850 ppm B (https://www.ioneer.com/wp-content/uploads/2023/05/ioneer-2023-mineral-resource.png accessed 2.19.24).**

**8. ACME Lithium found outcrop lithium values to 1418 ppm in their latest focused outcrop sampling at neighboring Fish Lake Valley (ACME, March 13, 2023).**

**Three known geothermal prospects, Silver Peak, Fish Lake Valley and Alum, are shown (Hulen, J.B., 2008)**

**There are many metallic prospects in the area. Three of the more major are shown on the map. Sunshine Mining mined the 16-to-1 mine at Nivloc in the 1980s. Scorpio Gold operated the Mineral Ridge mine 2011 – 2017. The gold rush to Weepah in 1927 is called the Last Gold Rush.**

**The Author has not been able to verify the information and the information is not necessarily indicative of mineralization on the Property that is the subject of this Technical Report.**

## 24. OTHER RELEVANT DATA AND INFORMATION

**As of the effective date, the Author is not aware of any additional data or information material to this Report.**

## 25. INTERPRETATION AND CONCLUSIONS

**Lithium brine occurs in and has been produced since 1966 in various aquifer horizons within Tertiary sediments filling the Clayton Valley ground water basin. Current drilling found a stratigraphy with an approximately horizontal orientation based on bedding in drill core and hole correlation. One unit, the Lower Gravel Unit (LGU), is widespread in the northern valley subsurface at comparable thicknesses – 555' including transition - to the drilled intercepts here and is a widely recognized host for lithium brines.**

**Sampling by passive by HydraSleeve® sampling down just into the top of the LGU unit shows a relatively steady increase in lithium to 130 ppm at the very top. Ten samples**

**collected from the isolated LGU unit during pump testing in a large diameter rotary hole averaged 95 ppm Li. The pumping test was also designed to estimate transmissivity and storativity of the LGU win hole TW-1. One 20-foot packer sample collected in the bedrock Cambrian Campito formation analyzed 77 ppm Li – the first known analysis from below the Tertiary aquifers. A composite value of 96 mg/L (ppm adjusted for density) was used for the resource calculation. This is supported by the number of samples collected by different methods and analyzed by different techniques at different laboratories and is in agreement with published results elsewhere in the district. This sampling also backs the vertical continuity assumed for a resource calculation.**

**Drill core sample testing for physical attributes such as porosity and specific yield, downhole logs such as nuclear magnetic resonance (NMR) logging provides indications of potential fluid volume, mobile, or capillary bound waters, and estimates of hydraulic conductivity and pump testing providing such measurements as well efficiency and specific capacity all are within reasonable bounds and provide the numeric values needed for the resource calculation.**

**The assumed lateral limit for the brine is based on interpretation of geophysical data. The contractor (Hasbrouck) has years of experience in different parts of Clayton Valley. The apparent detection of drawdown from pumping in other parts of the district supports horizontal continuity and is supported by known stratigraphic aquifer and by plumbing provided by the faulting system which is known to be very complex.**

**The calculation of the inferred resource follows the concept of Transitional Storage Resource (TSR) concept used in Clayton Valley since 1968. The Transitional Storage Reserve (TSR) has been defined as the quantity of water in storage in a particular groundwater basin that can be extracted and beneficially used during the transition period between natural equilibrium conditions and new equilibrium conditions under the perennial yield concept of groundwater development. In other words, pumping draws down the water table to a new equilibrium. That is within the general scenario of precipitation minus evaporation and runoff yields recharge.**

**The issues are many including many factors that are estimates only and the chemical and isotopic evidence presented here that the brines may be sourced from a geothermal/hot springs system fluids which Nevada recognizes as a separate category regulated separately from ground water. Still, lithium brines currently are regulated as ground water and thus this resource calculation follows state precedent.**

**The current ground water regulation is the most serious issue for the Project. Clayton Valley is now judged to be over allocated and new diversions are not granted. To move into production, ACME will need to get permitting and allocation for water rights from the State of Nevada, purchase water rights from an existing holder or see changes in how brines are regulated similar to geothermal fluids.**

**Other potential challenges are such things as possible obstacles developing direct recovery of lithium metallurgical technology or changing battery technology.**

**The Author's conclusion is that the drill results warrant moving the Project forward.**

## 26. RECOMMENDATIONS

**The results to date justify this Author recommend the following program. The recommended program has three objectives to move the Property forward:**

- **Test the lower ash unit in hole TW-1**
- **Drill two additional holes to check the lateral continuity of lithium values and rock characteristics.**
- **Test EM geophysics and seismic prospecting tools for feeder zones.**

**The lower ash unit is a producing aquifer and mineral host elsewhere in the basin. The HydraSleeve® sampling shows lithium values of about 100 mg/L in that interval which is comparable to current production grades. The unit is about 1180 to 1250 feet (360 to 381 meters) bgs in the current drill holes That is just above the casing installed for pump tests of the lower gravel in TW-1. That can be accomplished by perforating the current casing in TW-1 and sample by packer and airlift. This is budgeted at $160,000.**

**Two core holes offsetting the current holes and drilled to the basement Campito Formation would provide confirmation of lateral continuity of brine values and rock physical characteristics. This should include full downhole geophysical logging (NMR, resistivity, natural gamma), sampling the well by HydraSleeve® or surge block and pulling the casing and installing grouted in vibrating wire piezometers for future monitoring. This is budgeted to be $1,770,000.**

**Geochemical, isotopic evidence and the brine recovered from the basement Campito fm. support the geothermal /hydrothermal origin for the brines. They then are fed by fault feeder zones. Looking forward, it makes sense to test for faults as a prospecting tool. It is proposed to run surface geophysical traverses to test for fault feeder zones using HSAMT or a variant and seismic at a budgeted cost of $125,000.**

**The reclamation bond and claim maintenance will be $65,000. Administration, management and consulting fees are budgeted to be $600,000.**

**The total budget of $2,270,000 is tabulated in Table 10.**

| ITEM | $US |
|---|---|
| Tw-1 Test Lower Ash | 160,000 |
| Drill two core holes | 1,770,000 |
| Ground geophysics | 125,000 |
| Reclamation bond | 40,000 |
| Claim maintenance | 25,000 |
| Admin, consultants | 600,000 |
| TOTAL | 2,720,000 |

**Table 10: Proposed Budget**

**Success measured by drilling results will lead to continued development under a separate budget.**

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