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**Technical Report**  
**Clayton Valley Lithium Clay Project,**  
**Esmeralda County, Nevada, USA**

Submitted to:  
**Spearmint Resources Inc.**

Report Date:	Effective Date:
June 10, 2021	June 9, 2021

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Project No.129500403

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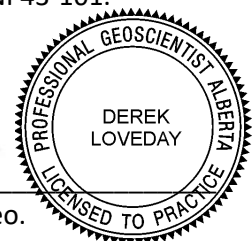
## CERTIFICATE OF QUALIFICATIONS

I, Derek J. Loveday, P.Geo., do hereby certify that:

1. I am currently employed as a Project Manager by Stantec Services Inc., 2890 East Cottonwood Parkway Suite 300, Salt Lake City UT 84121-7283.
2. I graduated with a Bachelor of Science Honours Degree in Geology from Rhodes University, Grahamstown, South Africa in 1992.
3. I am a licensed Professional Geoscientist in the Province of Alberta, Canada, #159394. I am registered with the South African Council for Natural Scientific Professions (SACNASP) as a Geological Scientist #400022/03.
4. I have worked as a geologist for a total of twenty-six years since my graduation from university, both for mining and exploration companies and as a consultant specializing in resource evaluation for precious metals and industrial minerals. I have many years' experience exploring and modelling stratiform sediment-hosted industrial mineral deposits in the western United States and Australia of naturally low-concentration elements including potassium (potash), uranium and lithium. I have worked on two lithium claystone projects in the vicinity of Tonopah, Nevada.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I meet the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I am responsible for preparation of portions of Sections 1 and 7, Section 14 and 15, and portions of Sections 25 through 27 for the technical report titled Technical Report Clayton Valley Lithium Clay Project, Esmeralda County, Nevada, USA" (the "Technical Report") dated June 10, 2021, Effective Date June 9, 2021.
7. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
8. I have not personally visited the Property.
9. At the effective date of the Technical 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.
10. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Report, the omission to disclose which makes the Report misleading.
11. I am independent of the issuer applying all of the tests in Section 1.5 of NI 43-101.

Dated June 10, 2021

  
Derek J. Loveday, P.Ge.  
Project Manager



CERTIFICATE OF QUALIFICATIONS

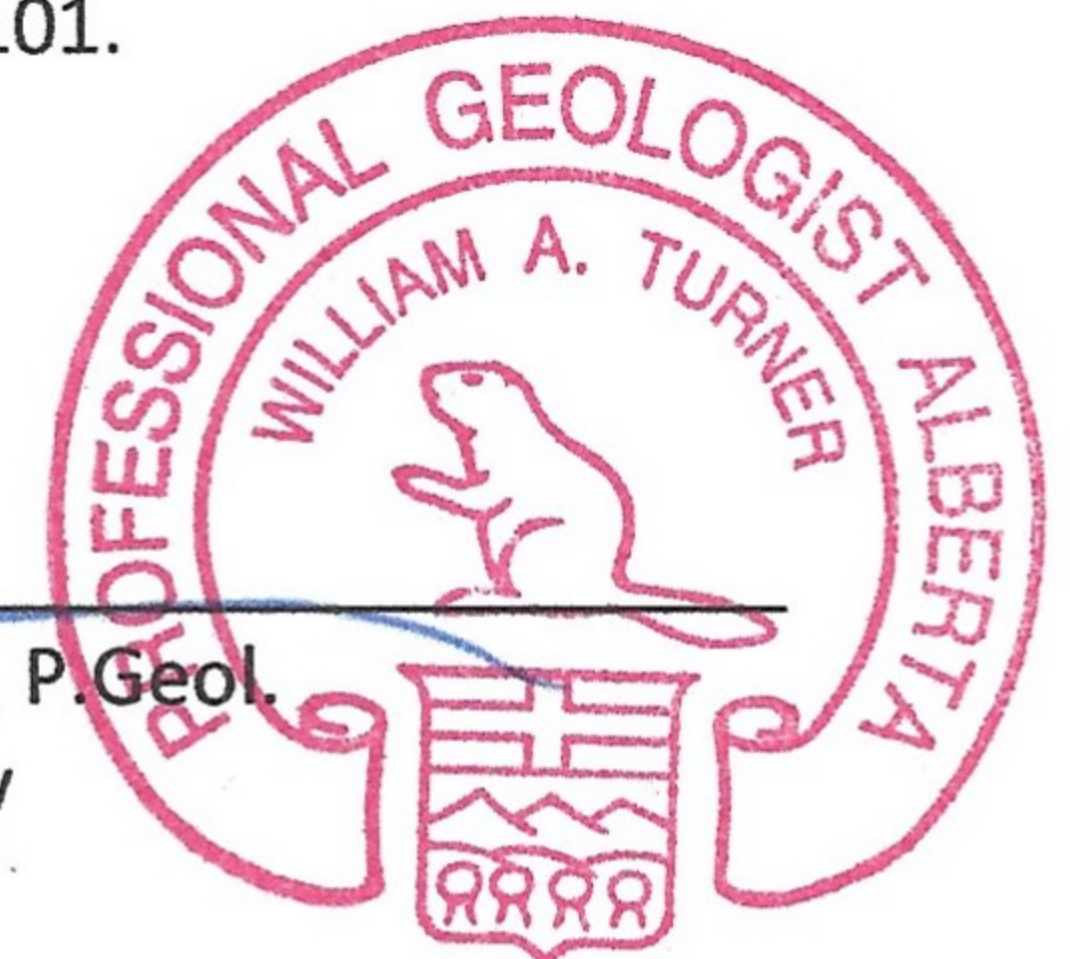
I, William A. Turner, P. Geol., do hereby certify that:

1. I am currently employed as Manager, Geology by Stantec Consulting Ltd., 200-325 25 Street S.E., Calgary, Alberta, Canada.
2. I graduated with a Bachelor of Science degree from the University of Alberta in 1995, and a Master of Science degree from the University of Alberta in 2000.
3. I am a member in-good-standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta (Member 58136) and a member in-good-standing of the Association of Professional Engineers, Geologists and Geophysicists of Saskatchewan (Member 15364), and a member in-good-standing of the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (Member L3656).
4. I have 26 years as a Geologist following graduation from my undergraduate degree, and have several years evaluating sediment-hosted stratabound deposits in North America. I have studied several sediment-hosted lithium deposits that include visiting lithium clay, lithium brine, and sedimentary lithium-boron deposits in west central Nevada between September 18 and 21, 2018, during the Society of Economic Geology fieldtrip titled "Lithium and Gold Associated with Rhyolites". I have worked on two lithium claystone projects in the vicinity of Tonopah, Nevada.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I meet the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I am responsible for the preparation of portions of Sections 1, Sections 2 through 6, portions of Section 7, Sections 8 through 13, Sections 16 through 24, and portions of Sections 25 through 27 for the report titled "Technical Report Clayton Valley Lithium Clay Project, Esmeralda County, Nevada, USA" (the "Technical Report") dated June 10, 2021, Effective Date June 9, 2021.
7. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
8. I personally inspected the property and core facility, and collected samples on April 6, 11, and 14, 2021.
9. At the effective date of the Technical 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.
10. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Report, the omission to disclose which makes the Report misleading.
11. I am independent of the issuer applying all of the tests in Section 1.5 of NI 43-101.

Dated June 10, 2021

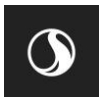


William A. Turner, P. Geol.  
Manager, Geology



## Table of Contents

<b>1</b>	<b>SUMMARY</b> .....	<b>1-1</b>
<b>2</b>	<b>INTRODUCTION</b> .....	<b>2-1</b>
<b>3</b>	<b>RELIANCE ON OTHER EXPERTS</b> .....	<b>3-1</b>
<b>4</b>	<b>PROPERTY DESCRIPTION AND LOCATION</b> .....	<b>4-1</b>
	4.1 Description and Location .....	4-1
	4.2 Property Concessions.....	4-4
	4.3 Option Agreements, Royalties and Encumbrances.....	4-4
	4.4 Surface Use and Disturbance Agreement .....	4-7
	4.5 Environmental Liabilities .....	4-7
	4.6 Other Significant Factors and Risks .....	4-7
<b>5</b>	<b>ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY</b> .....	<b>5-1</b>
	5.1 Accessibility.....	5-1
	5.2 Climate .....	5-1
	5.3 Local Resources and infrastructure.....	5-1
	5.4 Physiography .....	5-2
<b>6</b>	<b>HISTORY</b> .....	<b>6-1</b>
<b>7</b>	<b>GEOLOGIC SETTING AND MINERALIZATION</b> .....	<b>7-1</b>
	7.1 Regional Geology.....	7-1
	7.2 Property Geology .....	7-2
	7.2.1 Property Structure .....	7-5
	7.2.2 Alteration of the Units .....	7-5
	7.3 Property Mineralization .....	7-5
<b>8</b>	<b>DEPOSIT TYPES</b> .....	<b>8-1</b>
<b>9</b>	<b>EXPLORATION</b> .....	<b>9-1</b>
	9.1 Surface Sampling.....	9-1
<b>10</b>	<b>DRILLING</b> .....	<b>10-1</b>
<b>11</b>	<b>SAMPLE PREPARATION, ANALYSES &amp; SECURITY</b> .....	<b>11-1</b>
	11.1 Sampling Method and Approach.....	11-1
	11.2 Laboratory Analyses .....	11-1
	11.3 Quality Assurance and Quality Control.....	11-1
	11.4 Security .....	11-1
	11.5 Adequacy of Laboratory Procedures and Sample Security .....	11-2
<b>12</b>	<b>DATA VERIFICATION</b> .....	<b>12-1</b>
	12.1 Limitation to Data Validation by Qualified Person .....	12-3
<b>13</b>	<b>MINERAL PROCESSING AND METALLURGICAL TESTING</b> .....	<b>13-1</b>
<b>14</b>	<b>MINERAL RESOURCE ESTIMATES</b> .....	<b>14-1</b>
	14.1 Approach.....	14-1



## TECHNICAL REPORT – Clayton Valley Lithium Clay Project, Nevada, USA

14.2	Basis for Resource Estimation .....	14-1
14.3	Data Sources .....	14-2
14.4	Model.....	14-3
14.5	Assessment of Reasonable Prospects for Economic Extraction .....	14-13
14.6	Lithium Resource Estimates.....	14-15
14.7	Potential Risks.....	14-19
<b>15</b>	<b>MINERAL RESERVE ESTIMATES .....</b>	<b>15-1</b>
<b>16</b>	<b>MINING METHODS .....</b>	<b>16-1</b>
<b>17</b>	<b>RECOVERY METHODS .....</b>	<b>17-1</b>
<b>18</b>	<b>PROJECT INFRASTRUCTURE .....</b>	<b>18-1</b>
<b>19</b>	<b>MARKETS AND CONTRACTS .....</b>	<b>19-1</b>
<b>20</b>	<b>ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT .....</b>	<b>20-1</b>
<b>21</b>	<b>CAPITAL AND OPERATING COSTS .....</b>	<b>21-1</b>
<b>22</b>	<b>ECONOMIC ANALYSIS .....</b>	<b>22-1</b>
<b>23</b>	<b>ADJACENT PROPERTIES .....</b>	<b>23-1</b>
<b>24</b>	<b>OTHER RELEVANT DATA AND INFORMATION .....</b>	<b>24-1</b>
<b>25</b>	<b>INTERPRETATION AND CONCLUSIONS .....</b>	<b>25-1</b>
<b>26</b>	<b>RECOMMENDATIONS .....</b>	<b>26-1</b>
<b>27</b>	<b>REFERENCES.....</b>	<b>27-1</b>

### List of Tables

Table 1.1	Summary of Drilling on Project Area.....	1-5
Table 1.2	Summary Agitated Leach Test Results for Sample 4653-001.....	1-5
Table 1.3	Lithium Resource Estimates – U.S. Customary Units.....	1-8
Table 1.4	Lithium Resource Estimates – Metric Units .....	1-8
Table 1.5	Phase 1 Work Program Cost Estimate.....	1-9
Table 4.1	Summary of Property Claims .....	4-5
Table 10.1	Summary of Drilling on Property .....	10-1
Table 10.2	Summary of Drilling on Project Area.....	10-2
Table 12.1	Site Investigation Lithium Assay Validation.....	12-2
Table 12.2	Property Hole Location Validation.....	12-3
Table 13.1	Composite Sample 4653-001 XRD Analyses .....	13-1
Table 13.2	Summary Agitated Leach Test Results for Sample 4653-001.....	13-2
Table 14.1	Block Model Parameters .....	14-3
Table 14.2	Vertical Zone Thickness from Drill Holes .....	14-8
Table 14.3	Lithium Grade Estimation Parameters .....	14-10
Table 14.4	Lithium Resource Estimates – U.S. Customary Units .....	14-17
Table 14.5	Lithium Resource Estimates – Metric Units .....	14-17
Table 23.1	Adjacent Properties.....	23-1



Table 25.1 Lithium Resource Estimates – U.S. Customary Units ..... 25-2  
Table 25.2 Lithium Resource Estimates – Metric Units ..... 25-2  
Table 26.1 Phase 1 Work Program Cost Estimate ..... 26-1

**List of Figures**

Figure 1-1 General Location Map ..... 1-2  
Figure 1-2 Land Tenure Map ..... 1-3  
Figure 1-3 Resource Classification Map ..... 1-7  
Figure 4-1 General Location Map ..... 4-2  
Figure 4-2 Property Location Map ..... 4-3  
Figure 4-3 Land Tenure Map ..... 4-6  
Figure 5-1 Infrastructure Map ..... 5-3  
Figure 7-1 Regional Geology Map ..... 7-3  
Figure 7-2 Property Geology Map ..... 7-4  
Figure 7-3 Structural Cross Sections ..... 7-6  
Figure 9-1 2017 Surface Sample Locations ..... 9-2  
Figure 10-1 Drill Hole Location Map ..... 10-3  
Figure 13-1 Lithium Extraction vs. Acid Addition ..... 13-3  
Figure 14-1 Surface Topography and Model Limits Map ..... 14-4  
Figure 14-2 Model Zones ..... 14-6  
Figure 14-3 Mineralized Zone Grade Distribution ..... 14-7  
Figure 14-4 Mineralized Zone Semi-Variogram ..... 14-9  
Figure 14-5 Resource Model Cross Sections ..... 14-12  
Figure 14-6 Economic Pit Shell ..... 14-14  
Figure 14-7 Resource Classification Map ..... 14-16  
Figure 14-8 Economic Pit Shell Depth Map ..... 14-18



# 1 SUMMARY

## **Location and Concession Description**

The Clayton Valley Lithium Clay Project is located 55 kilometres west of the town of Tonopah and to the southeast of Albemarle's Silver Peak Mine (Figure 1-1). The Project consists of 26 contiguous unpatented placer claims that span from McGee 30 to McGee 55 and cover 890 acres (~360 hectares) as shown in Figure 1-2.

## **Option Agreements, Royalties and Encumbrances**

Spearmint Resources Inc. signed an agreement on June 14, 2017, with Robert D. Marvin and Joy K. Marvin, whereby Spearmint Resources Inc. earned an undivided 100% interest in the Project following a total cash payment of US\$30,000; the Project is subject to a 3.75% Net Smelter Return Royalty.

## **Geology**

The Project is hosted in the Esmeralda Formation, from the late Miocene to early Pliocene epochs (2-5 ma), which is a closed basin system within the Basin and Range Physiographic province. The Project area is composed of a thick sequence of claystone, minor sandstone lenses, and interbedded lapilli tuffs. The western portion of the Project area has the same units as the eastern portion; however, has been down dropped due to faulting. The eastern half of the claim block dips at ~5°E, while the western portion of the claim block is relatively flat lying to westerly dipping by a few degrees. Strike of the claystone is approximately NNE. Lithologically, the Project area is composed of five main units:

- Recent alluvium;
- Lithium-bearing tuffaceous mudstone that has alternating beds of silt and mudstones, volcanic ash, and hard tuffaceous beds up to a meter thick deposited in a lacustrine environment;
- Lithium-bearing green claystone;
- Lithium-bearing green claystone with interbedded sand lenses; and
- Brown sandstone with minor clay lenses that contain little to no lithium;

The Project area has undergone at least two generations of faulting. There appears to be a NW to SE set of high-angle normal faults that are subsequently cut by NNE to SSW high-angle normal faults. This latter fault set may be associated with regional range front faulting.







**Legend**

- ★ Clayton Valley Lithium Clay Project
- City
- State Boundary
- County (Nevada)

**Notes**

1. Coordinate System: NAD 1927 UTM Zone 11N
2. Data Source: basemap - World Topographic Map, Esri



TECHNICAL REPORT CVLC PROJECT

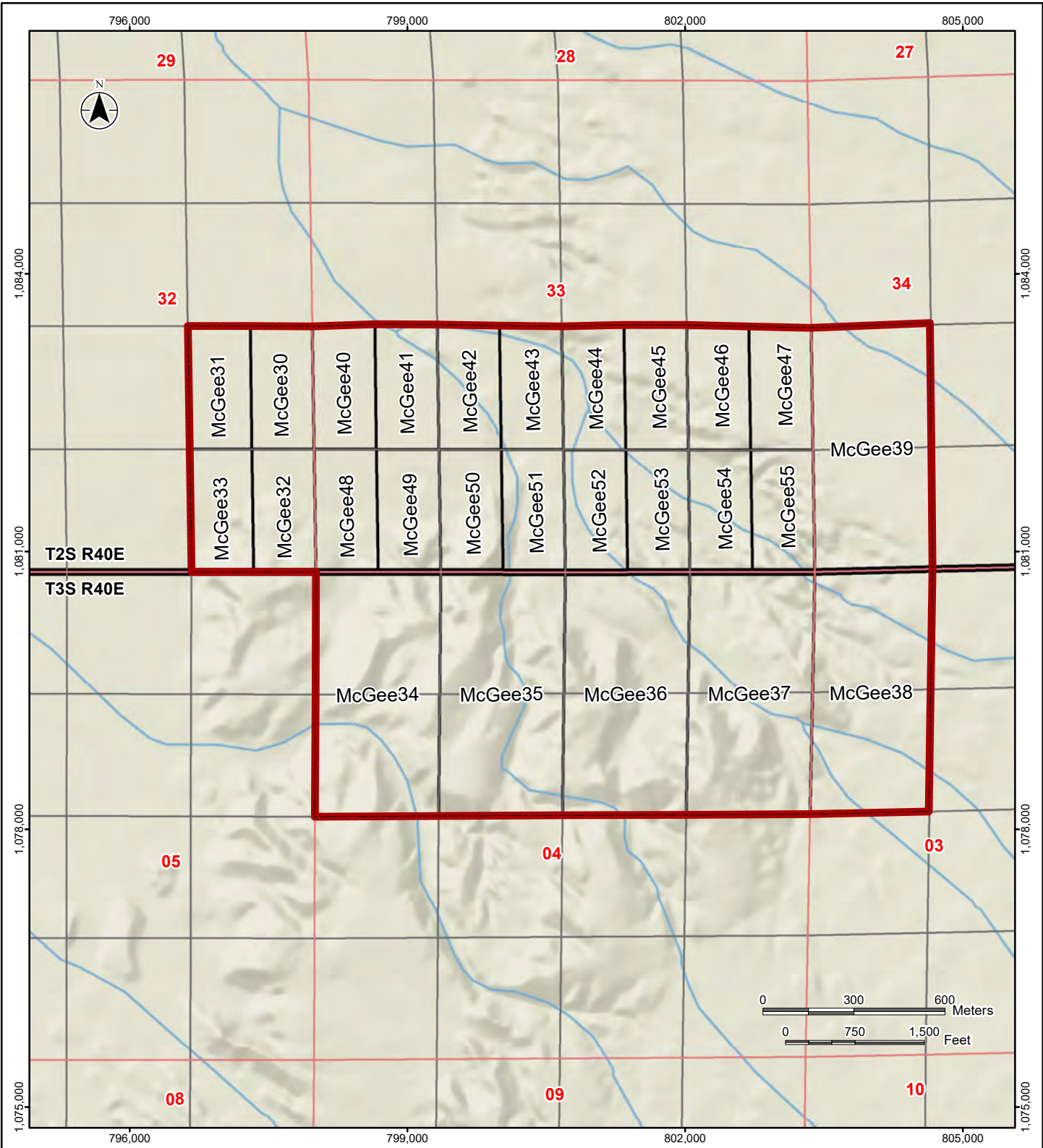
**General Location Map**

**Figure 1-1**

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

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**Legend**

-  Mineral Claim
-  Clayton Valley Lithium Clay (CVLC) Project Area
-  Section
-  Township and Range

**Notes**

1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US
2. Data Source: BLM, <https://www.blm.gov/>; basemap: National Geographic World Map, Esri



TECHNICAL REPORT CVLC PROJECT

**Land Tenure Map**

**Figure 1-2**

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DATE: 21/06/09

**Mineralization / Deposit Style**

Field observations, geologic mapping, and drill programs show the presence of a thick tabular zone of lithium-rich claystone. Drilling on the east half of the Project area by Spearmint discovered a continuous, well mineralized section, up to 300 feet thick, of mixed sediments (tuffaceous mudstone) and underlying green clay. The dimensions of the mineralized claystone on the Project cover an area of approximately 2.2 km<sup>2</sup> (0.87 square miles) to the east of the F4 Range Front fault that limits the resource.

The structural setting, host lithologies, and mineralization observed on the Project is similar to the lithium-bound clay model, identified as Model 25I.3(T), that is proposed by Asher-Bolinder (1991).

**Exploration - 2017 Surface Sampling Program**

Spearmint completed a surface sampling program in March 2017. Ninety-one samples were collected during this program and were analysed by ultra-trace aqua regia Inductively Coupled Plasma-Mass Spectrometry analyses (method ME-MS41) for 51 elements. Sample results returned an average lithium value of 843 ppm Li with the highest Li value of 1,630 ppm Li being returned from sample SM-15.

**Drilling – 2018 and 2020 Campaigns**

All drilling on the Project was completed by Harris Exploration Drilling and Associates of Escondido, California. Four holes, which included Reverse Circulation / rotary and NQ core holes, were completed in the 2018 drilling campaign, while 10 core holes were completed in the fall of 2020. Table 1.1 shows a summary of the highlights from these drilling campaigns.



**Table 1.1**  
**Summary of Drilling on Project Area**

Hole Name	From (ft)	To (ft)	Li (ppm)
SPMT-1	175	210	1,140
SPMT-3	175	190	1,073
SPMT-5	95	115	1,078
SPMT-5	185	215	1,398
inc	195	200	1,840
inc	205	210	1,650
SPMT-6	105	245	1,061
SPMT-7	210	265	1,214
SPMT-8	265	295	1,070
inc	240	245	1,550
SPMT-11	80	190	1,020
inc	105	110	1,490
SPMT-12	10	110	1,057
SPMT-13	50	85	1,014
SPMT-13	140	205	1,042
SPMT-14	15	70	1,046
inc	15	20	1,540
SPMT-14	110	140	1,017
SPMT-14	170	205	1,130
inc	175	180	1,730

**Mineral Processing and Metallurgical Testing**

Six leach tests were completed on the composite sample 4653-001 by McClelland Laboratories Inc. (McClelland), which is located in Sparks, Nevada. A summary of the leach test results is presented in Table 1.2.

**Table 1.2**  
**Summary Agitated Leach Test Results for Sample 4653-001**

Acid Used	Acid Usage, kg/mt		Li Extraction	Li Head Grade, mg/kg	
	Added	Consumed	%	Calculated	Assayed
H <sub>2</sub> SO <sub>4</sub>	200	196	24.3	909	799
H <sub>2</sub> SO <sub>4</sub>	400	315	66.4	959	799
H <sub>2</sub> SO <sub>4</sub>	500	329	79.6	1,091	799
HCl	150	N/A	23.6	885	799
HCl	300	N/A	70.3	950	799
HCl	375	N/A	82.7	1,062	799

The conclusion of McClelland was that high lithium extractions were achieved by both sulfuric acid (up to 79.6%) or hydrochloric acid (up to 82.7%).



### Geological Model and Resource Estimation

Lithium resources are contained within the predominantly green claystone beds deposited on top of a brown sandstone. This mineralized zone is further constrained by a large displacement normal Range Front fault (F4) in the west of the Project area. This fault defines the maximum extent of inferred resources as shown on Figure 1-3. Mineral resources are classified by distance from nearest valid drill hole sample up to maximum distance of 2,000 ft (610 m) for Inferred, and 1,000 ft (305 m) for Indicated. No measured resources have been identified due to the unavailability of density data, overall variability in lithium grades and requirements for more detailed lithological mapping to further refine the waste versus mineralized zones.

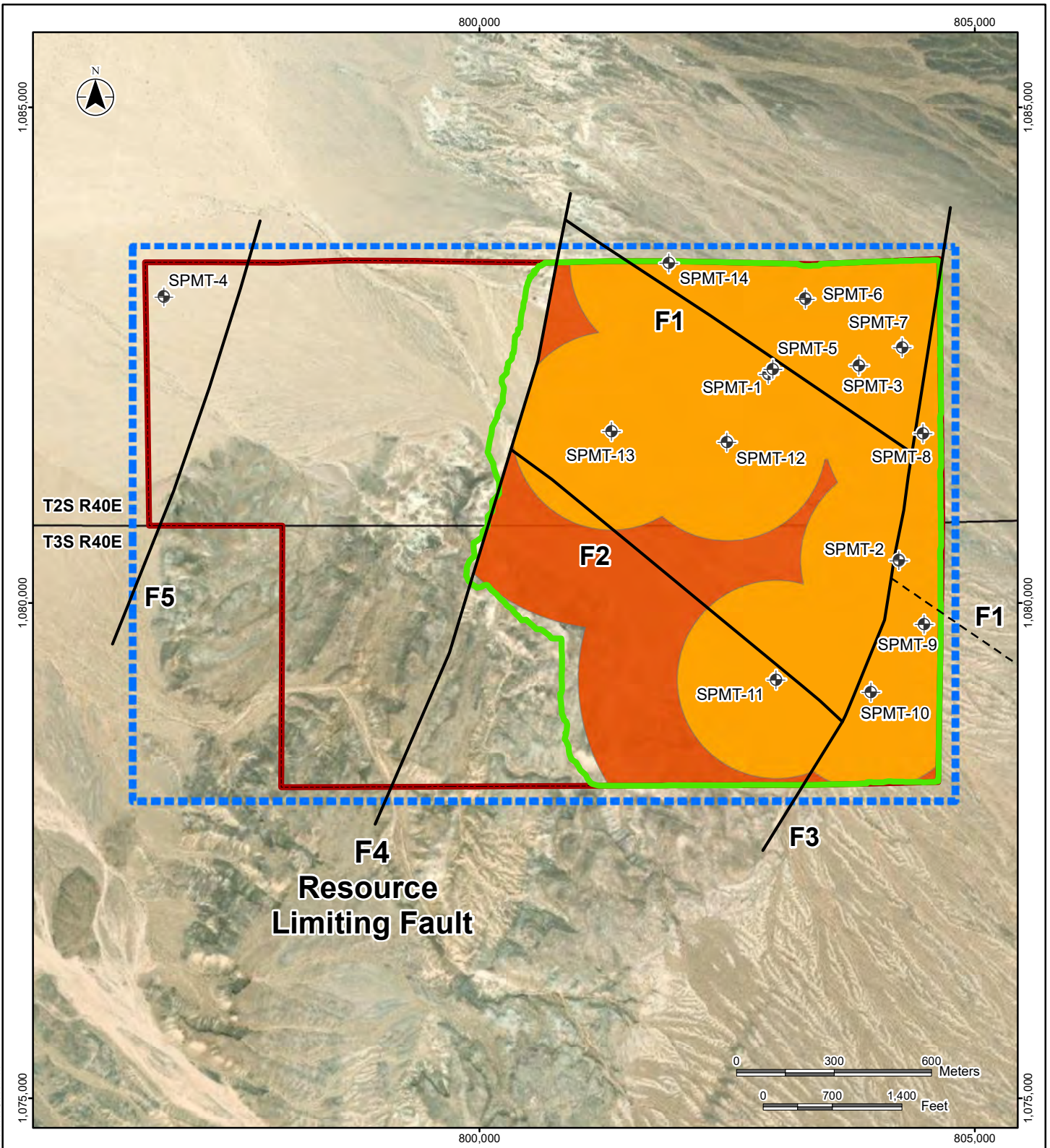
The geologic model from which lithium resources are reported is a 3D block model. The resource estimates are contained within an economic pit shell at constant 45° pit slope to a maximum vertical depth of 535 ft (163 m) below surface using a base case cutoff grade 400 ppm lithium to produce an eventual battery grade lithium carbonate product.

The following costs, recoveries and revenue, in metric units and US\$, were used to derive a base case cutoff grade for an eventual lithium carbonate (Li<sub>2</sub>CO<sub>3</sub>) product:

- Mining costs US\$2/tonne;
- Processing costs US\$15/tonne;
- Processing recovery 80%; and
- US\$10,000/tonne revenue for Li<sub>2</sub>CO<sub>3</sub> product.

The lithium mineral resource estimates are presented in Table 1.3 in U.S. customary units and Table 1.4 in metric units. Lithium resources are presented for a range of cutoff grades to a maximum of 800 ppm lithium. The base case lithium resource estimates are highlighted in bold type in Table 1.3 and Table 1.4. All lithium resources on the Project are surface mineable at a stripping ratio of 0.11 waste yd<sup>3</sup>/ton (0.09 m<sup>3</sup>/tonne) at the base case cutoff grade of 400 ppm lithium. The effective date of the lithium resource estimate is June 9, 2021.





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**Legend**

- Drill Hole
- Geologic Model Fault Trace
- Fault Inferred
- Pit Shell Crest
- Model Boundary
- Clayton Valley Lithium Clay (CVLC) Project Area
- Township and Range
- Resource Classification**
- Indicated
- Inferred

**Notes**  
 1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US  
 2. Data Source: Stantec Model; basemap: World Imagery, Esri



TECHNICAL REPORT CVLC PROJECT

**Resource Classification Map**

**Figure 1-3**

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**Table 1.3**  
**Lithium Resource Estimates – U.S. Customary Units**

Cutoff Li (ppm)	Volume (Myd <sup>3</sup> )	Tons (Mst)	Li (ppm)	tons ('000 st)	
				Li	Li <sub>2</sub> CO <sub>3</sub>
<b>Indicated</b>					
<b>400</b>	<b>151</b>	<b>216</b>	<b>781</b>	<b>169</b>	<b>898</b>
600	123	176	843	148	789
800	67	96	951	91	486
<b>Inferred</b>					
<b>400</b>	<b>34</b>	<b>49</b>	<b>808</b>	<b>40</b>	<b>210</b>
600	31	44	841	37	197
800	17	24	952	23	120

- CIM definitions are followed for classification of Mineral Resource.
- Mineral Resource surface pit extent has been estimated using a lithium carbonate price of US\$10,000 US\$/tonne and mining cost of US\$2.00 per tonne, a lithium recovery of 80%, fixed density of 1.70 g/cm<sup>3</sup> (1.43 tons/yd<sup>3</sup>).
- Conversions: 1 metric tonne = 1.102 short tons, metric m<sup>3</sup> = 1.308 yd<sup>3</sup>, Li<sub>2</sub>CO<sub>3</sub>:Li ratio = 5.32.
- Totals may not represent the sum of the parts due to rounding.
- The Mineral Resource estimate has been prepared by Derek Loveday, P. Geo. of Stantec Consulting Services Ltd. in conformity with CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines and are reported in accordance with the Canadian Securities Administrators NI 43-101. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that any mineral resource will be converted into mineral reserve.

**Table 1.4**  
**Lithium Resource Estimates – Metric Units**

Cutoff Li (ppm)	Volume (Mm <sup>3</sup> )	Tonnes (Mt)	Li (ppm)	Tonnes ('000 t)	
				Li	Li <sub>2</sub> CO <sub>3</sub>
<b>Indicated</b>					
<b>400</b>	<b>115</b>	<b>196</b>	<b>781</b>	<b>153</b>	<b>815</b>
600	94	159	843	134	715
800	51	87	951	83	441
<b>Inferred</b>					
<b>400</b>	<b>26</b>	<b>44</b>	<b>808</b>	<b>36</b>	<b>191</b>
600	23	40	841	34	179
800	13	21	952	20	109

- CIM definitions are followed for classification of Mineral Resource.
- Mineral Resource surface pit extent has been estimated using a lithium carbonate price of US\$10,000 US\$/tonne and mining cost of US\$2.00 per tonne, a lithium recovery of 80%, fixed density of 1.70 g/cm<sup>3</sup> (1.43 tons/yd<sup>3</sup>).
- Conversions: 1 metric tonne = 1.102 short tons, metric m<sup>3</sup> = 1.308 yd<sup>3</sup>, Li<sub>2</sub>CO<sub>3</sub>:Li ratio = 5.32.
- Totals may not represent the sum of the parts due to rounding.
- The Mineral Resource estimate has been prepared by Derek Loveday, P. Geo. of Stantec Consulting Services Ltd. in conformity with CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines and are reported in accordance with the Canadian Securities Administrators NI 43-101. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that any mineral resource will be converted into mineral reserve.



**Recommendations**

The recommendations are presented as Phase 1 and Phase 2 work programs. Advancing to a Phase 2 work program is contingent on obtaining positive results from the Phase 1 work program. The Phase 1 and Phase 2 work programs are presented below.

Phase 1 Work Program

The following additional exploration and testing is recommended:

- Fence line drilling across the resource limiting F4 fault to better define the extent of the resource in the west of the property.
- A LiDAR surface topography survey covering the extent of the Project area to aid in the identification of faults through observation of subtle surface disturbances in the data and to identify areas of potential deep surface weathering.
- Advance the 2017 surface mapping and sampling along the hill slopes on the western side of the Project area where there is greater potential for surface exposure of unweathered lithium-bearing claystone.

The estimated costs with the Phase 1 work program are outlined in Table 1.5.

**Table 1.5  
Phase 1 Work Program Cost Estimate**

<b>Program</b>	<b>Purpose</b>	<b>Method</b>	<b>Total (US\$000)</b>
Fence Line Drilling	Defining resource extent in western portion of the Project area	Core drilling for five holes at 100 \$/ft including assay and labor, total program is 2,500 ft	250
LiDAR Survey	Potential identification of subtle changes in subsurface geology	Drone LiDAR Survey	15
Surface mapping and sampling	Advancing geological interpretation and increasing resource confidence	Field mapping	20
Additional core sampling	Obtain bulk density and additional multi-element analyses from available samples in storage	Laboratory analysis	15
<b>Estimated Total</b>			<b>300</b>





Phase 2 Work Program

Stantec recommends that the next phase is to conduct a Preliminary Economic Assessment (PEA) on the Property. The PEA involves several major tasks, which are listed below:

- Identify ground water sources to be utilized in the development of the Project;
- Mine design and development;
- Lithium process facilities including a sulphuric acid plant;
- Project infrastructure and required utilities;
- Tailings management plan;
- Regulatory roadmap outlining the regulatory process, timelines and costs; and
- Capex and Opex estimate and economic analysis.

The cost to complete the Phase 2 work program is estimated at US\$425k.



## 2 INTRODUCTION

Spearmint Resources Inc. (Spearmint) secured Stantec Consulting Ltd. (Stantec), in a contract dated March 10, 2021, to prepare a Technical Report in accordance with the requirements of National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101). The purpose of this Technical Report is to complete resource estimates for the Clayton Valley Lithium Clay Project (the Project).

An Independent Stantec Qualified Person inspected the Project area and core facility on April 6, 11, and 14, 2021. The Qualified Person collected outcrop samples from various locations on the Project area, as well as core samples from the core facility. The samples were transported by the Qualified Person to Fallon, Nevada, where they were directly shipped to AGAT Laboratories (AGAT) in Calgary, Alberta, on April 15, 2021.

The “Effective Date” means, with reference to a Technical Report, the date of the most recent scientific or technical information included in the Technical Report.



### **3 RELIANCE ON OTHER EXPERTS**

The Qualified Persons did not rely on a report, opinion or statement of another expert who is not a qualified person, or on information provided by the issuer, concerning legal, political, environmental, or tax matters.



## **4 PROPERTY DESCRIPTION AND LOCATION**

### **4.1 Description and Location**

The Project is located approximately 280 kilometres northwest of Las Vegas, and 55 kilometres west of the town of Tonopah (Figure 4-1). The Project is located primarily in Sections 32, 33, and 34 of T2S, R40 E and Sections 3, 4 and 5 of T3S, R40E. The general geographic coordinates of the Project are 37°42'53"N and 117°32'33"W (4,174,300N, 452,200E, UTM Zone 11). The Project is accessed off paved State Highway 265 to Silver Peak Mine, and by well-maintained county gravel roads that lead into the Project area. Figure 4-2 shows the location of the Project relative to the towns of Tonopah and Goldfield.





**Legend**

- ★ Clayton Valley Lithium Clay Project
- City
- State Boundary
- County (Nevada)

**Notes**

1. Coordinate System: NAD 1927 UTM Zone 11N
2. Data Source: basemap - World Topographic Map, Esri



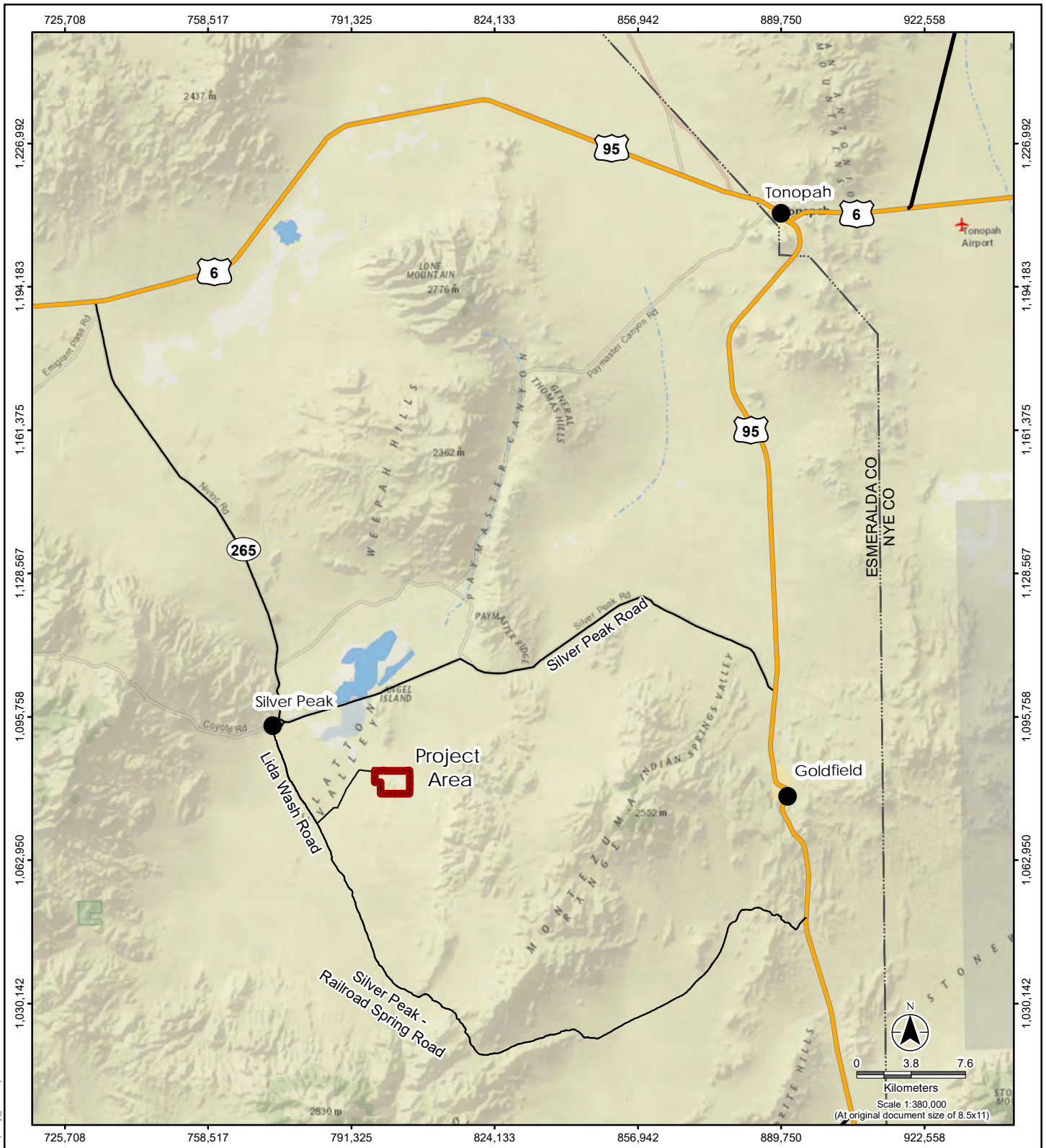
TECHNICAL REPORT CVLC PROJECT

**General Location Map**

**Figure 4-1**

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

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**Legend**

- Town
- Major Road
- Major Local Road
- Local Connecting Road
- County
- Clayton Valley Lithium Clay (CVLC) Project Area

**Notes**

1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703
2. Data Source: basemap - National Geographic World Map, Esri



TECHNICAL REPORT CVLC PROJECT

**Property Location Map**

**Figure 4-2**

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

## 4.2 Property Concessions

The Project is registered with the Department of the Interior Bureau of Land Management (BLM) and Esmeralda County under the name Mathers Lithium Corp., which is a Nevada-based company, and is 100% owned by Spearmint Resources Inc.

The Project consists of 26 contiguous unpatented placer claims that span from McGee 30 to McGee 55 and cover 890 acres (~360 hectares). Table 4.1 lists the claims, claim locations and size, and Figure 4-3 shows the land tenure map.

To maintain the claims in good standing, a payment of US\$165/claim to the BLM and US\$12/claim to Esmeralda County must be made by September 1 of each year.

## 4.3 Option Agreements, Royalties and Encumbrances

### **Spearmint Resources – Robert D. Marvin and Joy K. Marvin Option and Royalty Agreement**

Spearmint Resources Inc. signed an agreement on June 14, 2017, with Robert D. Marvin and Joy K. Marvin (the “Marvins”), whereby Spearmint Resources Inc. may earn an undivided 100% interest in the Project, subject to a Royalty.

Terms of the Purchase/Royalty Agreement are listed below:

- Total cash payment of US\$30,000:
  - a. Payment of US\$10,000 by September 1, 2017;
  - b. Payment of US\$20,000 by December 1, 2017;
- Retention by the Marvins of 3.75% Net Smelter Return.



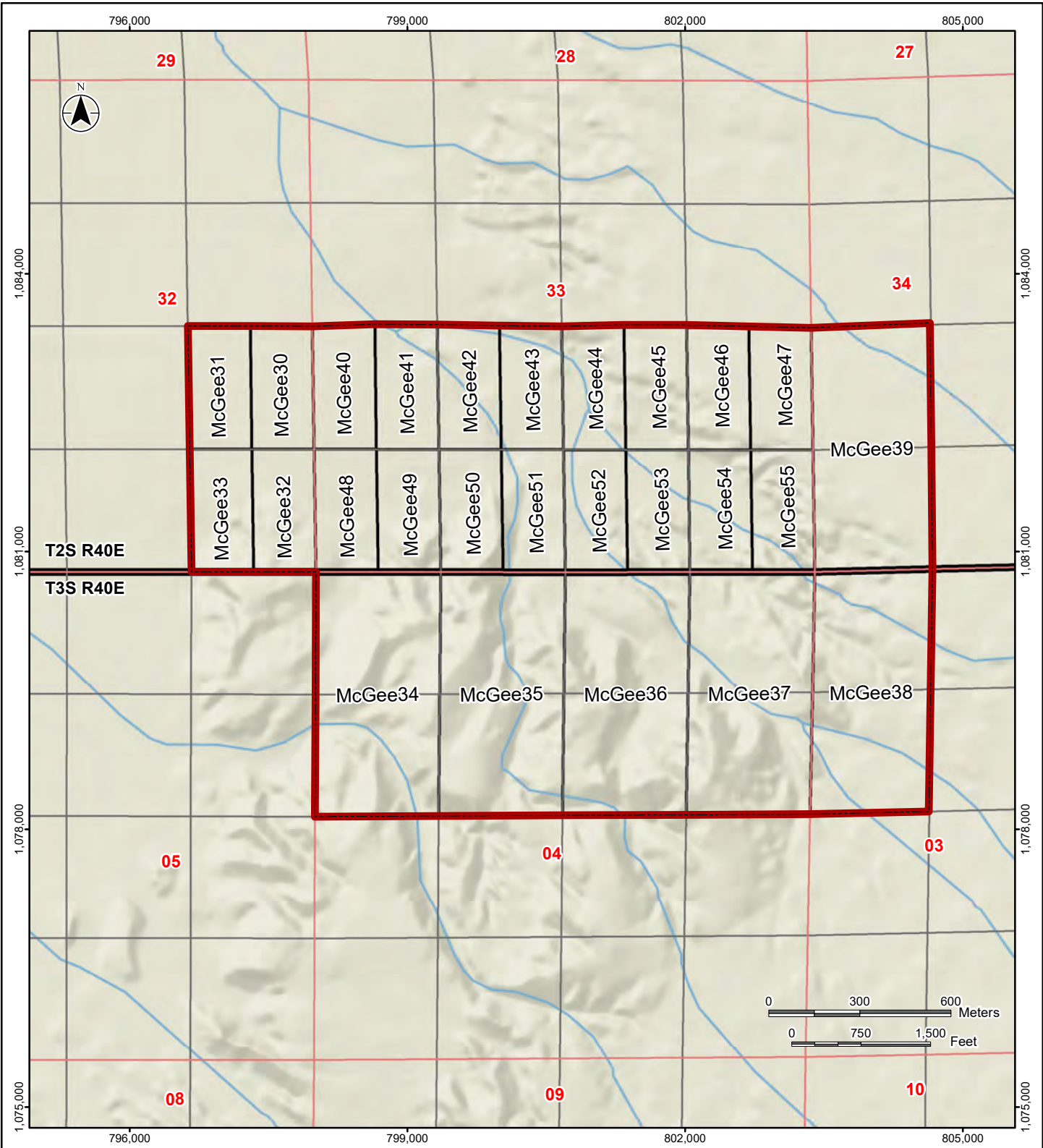
TECHNICAL REPORT – Clayton Valley Lithium Clay Project, Nevada, USA

Table 4.1  
Summary of Property Claims

Claim Name	Serial Number	Location Date	Claimant Name	Meridian	Township	Range	Section	Subdivision	Claim Size (Acres)
McGee 30	NMC1122825	2016-04-25	Mathers Lithium Corp.	21	002 S	040 E	32	SE	20
McGee 31	NMC1122826	2016-04-25	Mathers Lithium Corp.	21	002 S	040 E	32	SE	20
McGee 32	NMC1122827	2016-04-25	Mathers Lithium Corp.	21	002 S	040 E	32	SE	20
McGee 33	NMC1122828	2016-04-25	Mathers Lithium Corp.	21	002 S	040 E	32	SE	20
McGee 34	NMC1140292	2016-12-17	Mathers Lithium Corp.	21	003 S	040 E	4	NW	80
McGee 35	NMC1140293	2016-12-17	Mathers Lithium Corp.	21	003 S	040 E	4	NW	80
McGee 36	NMC1122831	2016-02-20	Mathers Lithium Corp.	21	003 S	040 E	4	NE	80
McGee 37	NMC1122832	2016-02-20	Mathers Lithium Corp.	21	003 S	040 E	4	NE	80
McGee 38	NMC1122833	2016-02-20	Mathers Lithium Corp.	21	003 S	040 E	3	NW	80
McGee 39	NMC1122834	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	34	SW	80
McGee 40	NMC1122835	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SW	20
McGee 41	NMC1122836	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SW	20
McGee 42	NMC1122837	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SW	20
McGee 43	NMC1122838	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SW	20
McGee 44	NMC1122839	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SE	20
McGee 45	NMC1122840	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SE	20
McGee 46	NMC1122841	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SE	20
McGee 47	NMC1122842	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SE	20
McGee 48	NMC1122843	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SW	20
McGee 49	NMC1122844	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SW	20
McGee 50	NMC1122845	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SW	20
McGee 51	NMC1122846	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SW	20
McGee 52	NMC1122847	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SE	20
McGee 53	NMC1122848	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SE	20
McGee 54	NMC1122849	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SE	20
McGee 55	NMC1122850	2016-02-20	Mathers Lithium Corp.	21	002 S	040 E	33	SE	20







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**Legend**

-  Mineral Claim
-  Clayton Valley Lithium Clay (CVLC) Project Area
-  Section
-  Township and Range

**Notes**

1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US
2. Data Source: BLM, <https://www.blm.gov/>; basemap - National Geographic World Map, Esri



TECHNICAL REPORT CVLC PROJECT

**Land Tenure Map**

**Figure 4-3**

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CHKD BY: D.L.  
DATE: 21/06/09

**4.4 Surface Use and Disturbance Agreement**

Exploration under five acres would likely only require Notice level permitting with the BLM. Proposed disturbance over five acres would require the preparation of a Plan of Operations under BLM Surface Management Regulations at 43 Code of Federal Regulations (CFR) 3809, and would then require baseline data collection, National Environmental Policy Act analysis, and bonding.

**4.5 Environmental Liabilities**

The Clayton Valley Lithium Clay Project is located in Esmeralda County, Nevada on Federal land managed by the Bureau of Land Management (BLM), Battle Mountain District, Tonopah Field Office. No previous environmental studies have been completed by Spearmint for the Project. Previous Past Notice level exploration has been conducted by Spearmint within the Project area. There is currently one authorized Notice level exploration permit in the Project area under NVN – 095118 (BLM, 2021).

**4.6 Other Significant Factors and Risks**

The Author is not aware of significant factors or risks that may materially restrict Spearmint from its right and ability to perform work on the Project.



## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **5.1 Accessibility**

The Clayton Valley Lithium Clay Project is located in Esmeralda County, Nevada. It is accessible from Tonopah and Goldfield from State Highway 265, ending at Silver Peak. Approximately eight kilometres of well-maintained county gravel roads lead into the Project area (Figure 5-1).

### **5.2 Climate**

The town of Tonopah, Nevada, is located 1,840 m above sea level (Climate-Data.org, 2020, para. 1). The Köppen-Geiger Climate Classification system designates this area as BWk: B – arid; W – desert; and k – cold arid, thus making the Tonopah area effectively a cold desert area (Climate Change & Infectious Diseases, 2019; Weatherbase, 2020, para. 2).

July is the warmest month in the Tonopah region, with an average temperature of 21.6°C, while the coldest month of the year is January, with an average temperature of -1.3°C. August has the highest average precipitation, with 18 mm, and December has the lowest at 7 mm (Climate-Data.org, 2020, paras. 3-5). While precipitation is rare in the winter, summertime is prone to thunderstorms. Windstorms are not uncommon in the fall, winter, and spring.

### **5.3 Local Resources and infrastructure**

The town of Tonopah, with a population of 2,009 as of 2021 (World Population Review, 2021, para. 1) is an approximately 45-minute drive from the Project area. It is situated on highway US 95, and is equidistant between two international airports: McCarran International Airport, located in Las Vegas, Nevada, and Reno International Airport, located in Reno, Nevada. Both centres have major car and truck rental options available, as well as any necessary amenities. Highway US 6 runs east/west to the regional airfield which can accommodate east/west air transportation. (Tonopah, Nevada, 2020, para. 3). There are high voltage, industrial grade power lines within four kilometres of the Project area. A range of services are available in Tonopah, such as accommodation; elementary, middle, and high schools; restaurants; fuel; tourism; and general shopping. There are limited Primary Care and Emergency Medical Services in Tonopah, and the Mount Grant General Hospital, located 166 km northwest, in Hawthorn, Nevada, is the closest hospital. There is a history of mining and exploration in the Tonopah area, and as such, skilled labour and equipment are available in the area, as well as throughout Nevada.

The Union Pacific Railroad, which ships commodities such as non-metallic minerals, has two main lines that run through Nevada. One is in the northern part of the state, with stops at Reno, Flanigan, Winnemucca, Elko, and Wells, linking central California with Salt Lake City, Utah. The other runs through Las Vegas, in the southern part of the State, and connects Los Angeles/Long

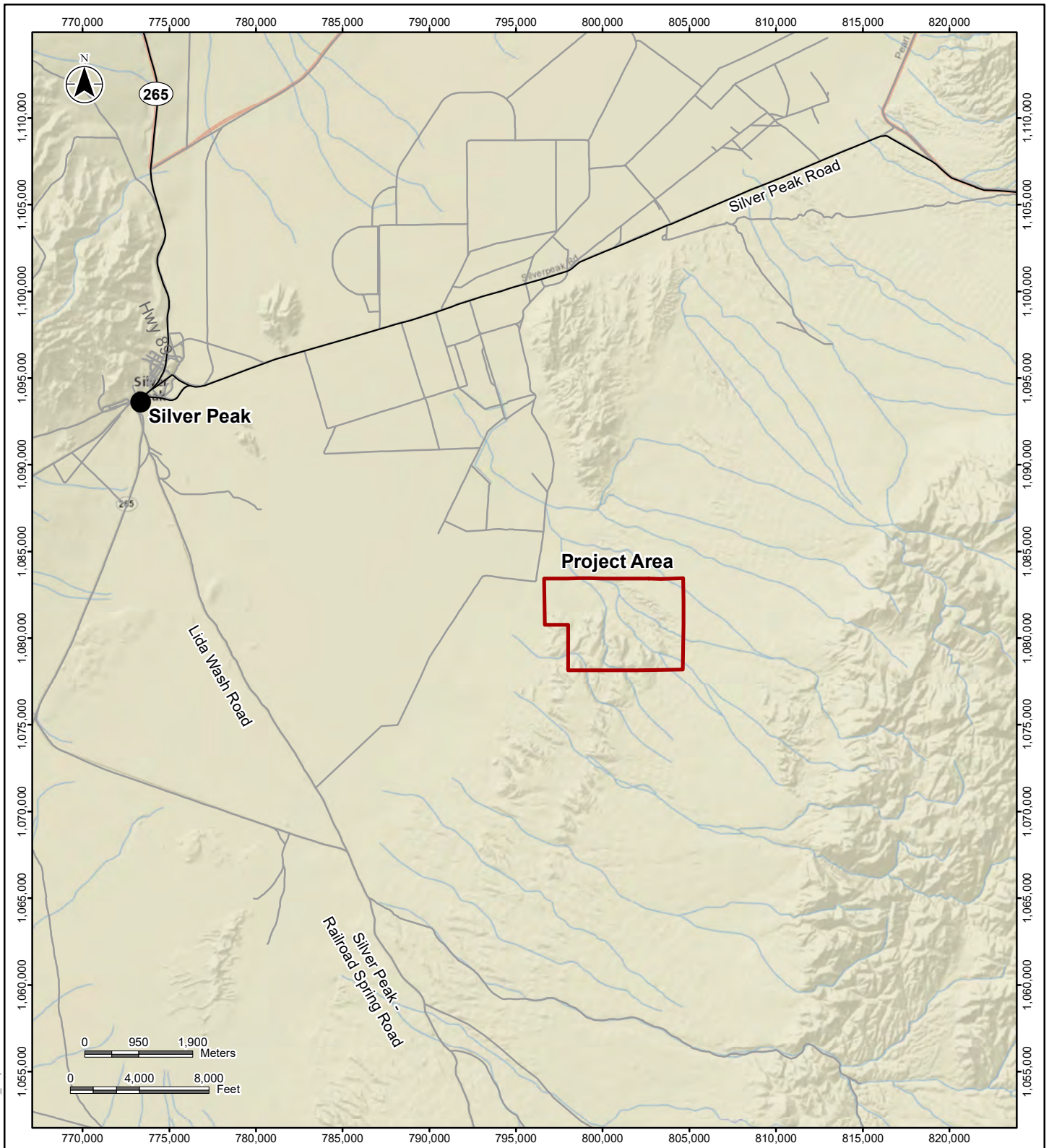


Beach, CA with Salt Lake City, Utah, and onwards to the Union Pacific transcontinental line and destinations east (Union Pacific, 2019, paras. 2, 4, and 6).

#### **5.4 Physiography**

The Clayton Valley Lithium Clay Project is located in the Walker Lane section of the Great Basin Physiographic Province. The Clayton Valley itself is a flat bottomed, dry salt lake basin that is bordered by the Silver Peak Range to the west. The terrain of the Project area has alluvial fans and badlands that reveal the erosional edge of the lithium-bearing claystone (Bain, p. 8).





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**Legend**

- Town
- Local Roads (Paved)
- Local Connecting Road
- Clayton Valley Lithium Clay (CVLC) Project Area

**Notes**

1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US
2. Data Source: nv\_roads: U.S. Geological Survey; basemap: National Geographic World Map, Esri



TECHNICAL REPORT CVLC PROJECT

**Infrastructure Map**

**Figure 5-1**

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

## 6 HISTORY

The Clayton Valley Lithium Clay Project, formerly the McGee Project, is a relatively unexplored area. The area was geologically mapped in the 1960s, and was determined to be mudstone, and part of the Esmeralda Formation (Bain, p. 11).

North of the Project area are several old prospecting pits of unknown age, along with several large stone monuments that were used as claim corners. There is no evidence of historic drilling on the Project area.



## 7 GEOLOGIC SETTING AND MINERALIZATION

### 7.1 Regional Geology

The Project is located in the Clayton Valley of Nevada to the southeast of Albemarle’s Silver Peak Mine. The Project is hosted in the Esmeralda Formation, from the late Miocene to early Pliocene epochs (2-5 ma). It is a closed basin system within the Basin and Range Physiographic province (Figure 7-1). Lane et al. (2018) addressed the regional geology of the area in their report, which is presented below:

Horst and graben normal faulting is a dominant structural element of the Basin and Range and is thought to have occurred in conjunction with deformation due to lateral shear stress, resulting in disruption of large-scale topographic features. The Walker lane, a zone of disrupted topography (Locke, et al., 1940) perhaps related to right-lateral shearing (Stewart, 1967), may pass within a few kilometres of the northern and eastern boundaries of Clayton Valley. The Walker lane is not well defined in this area and may be disrupted by the east-trending Warm Springs lineament (Ekren, et al., 1976), which could be a left-lateral fault conjugate to the Walker lane (Shawe, 1965). To the west of Clayton Valley, the Death Valley-Furnace Creek fault zone is a right-lateral fault zone that may die out against the Walker lane northwest of the valley. South of Clayton Valley, the arcuate form of the Palmetto Mountains is thought to represent tectonic “bending,” a mechanism taking up movement in shear zones at the end of major right lateral faults (Albers, 1967). In the mountains bordering the valley to the east and west, faults in Cenozoic rocks generally trend about N20° to 40°E. Near the margins of the playa surface, fault scarps having two distinct trends have been studied in detail (Davis, et al., 1979). At the eastern margin, a set of moderately dissected scarps in Quaternary alluvial gravels strike about N20°E. In the east central portion of the valley, a more highly dissected set of scarps in alluvium and upper Cenozoic lacustrine sediments strikes about N65°E. If the modification of these fault scarps is similar to fault-scarp modification elsewhere in Nevada and Utah (Wallace, 1977; Bucknam, et al., 1979) the most recent movement on the N20°E set of scarps probably occurred less than 10,000 years ago, while the last movement on the N65°E set is probably closer to 20,000 years in age (Davis, et al., 1979). Regional basement rocks consist of Precambrian (late Neoproterozoic) to Paleozoic (Ordovician) carbonate and clastic rocks deposited along the ancient western passive margin of North America. Regional shortening and low-grade metamorphism occurred during late Paleozoic and Mesozoic orogenies, along with granitic emplacement during the mid to late Mesozoic (ca. 155 and 85 Ma). Tectonic extension began in the late Cenozoic (~16 Ma) and has continued to the present. East of Clayton Valley, more than 100 cubic kilometres (km<sup>3</sup>) of Cenozoic ash-flow and air-fall tuff is exposed at Clayton Ridge and as far east as Montezuma Peak. These predominantly flat-lying, pumiceous rocks are interbedded with tuffaceous sediments between Clayton Ridge and Montezuma Peak; but at Montezuma



Peak these rocks are altered considerably and dip at angles of as much as 30°. In the Montezuma Range, they are unconformably overlain by rhyolitic agglomerates. Davis et al. (1986) speculate that the source of these tuff sheets may have been a volcanic center to the east near Montezuma Peak, to the south in the Montezuma Range, the Palmetto Mountains, Mount Jackson, or perhaps even the Silver Peak center to the west. Cenozoic sedimentary rocks are exposed in the Silver Peak Range, in the Weepah Hills, and in the low hills east of the Clayton Valley playa. These rocks all are included in the Esmeralda Formation (Turner, 1900). The Esmeralda Formation consists of sandstone, shale, marl, breccia, and conglomerate, and is intercalated with volcanic rocks, although Turner (1900) excluded the major ash-flow units and other volcanic rocks in defining the formation. The rocks of the Esmeralda Formation in and around Clayton Valley apparently represent sedimentation in several discrete Miocene basins. The age of the lower part of the Esmeralda Formation in Clayton Valley is not known, but an air-fall tuff in the uppermost unit of the Esmeralda Formation has a K-Ar age of  $6.9 \pm 0.3$  Ma (Robinson, et al., 1968). (p. 34-35)

## **7.2 Property Geology**

The geology of the Project is illustrated in Figure 7-2 and comprises a synopsis of approximate location of regionally mapped formations by the United States Geological Survey (USGS) as well as the Author's interpretation of significant structural features as observed from both public (USGS.gov), site inspections and reviewing Spearmint's exploration data. Observations support that the Project area is hosted in a thick sequence of claystone, minor sandstone lenses, and interbedded lapilli tuffs. The western portion of the Project area has the same units as the eastern portion; however, has been down dropped due to faulting as shown in Figure 7-2. The eastern half of the claim block has an approximate dip of 5°E, while the western portion of the claim block is relatively flat lying to westerly dipping by a few degrees. Strike of the claystone is ~NNE.

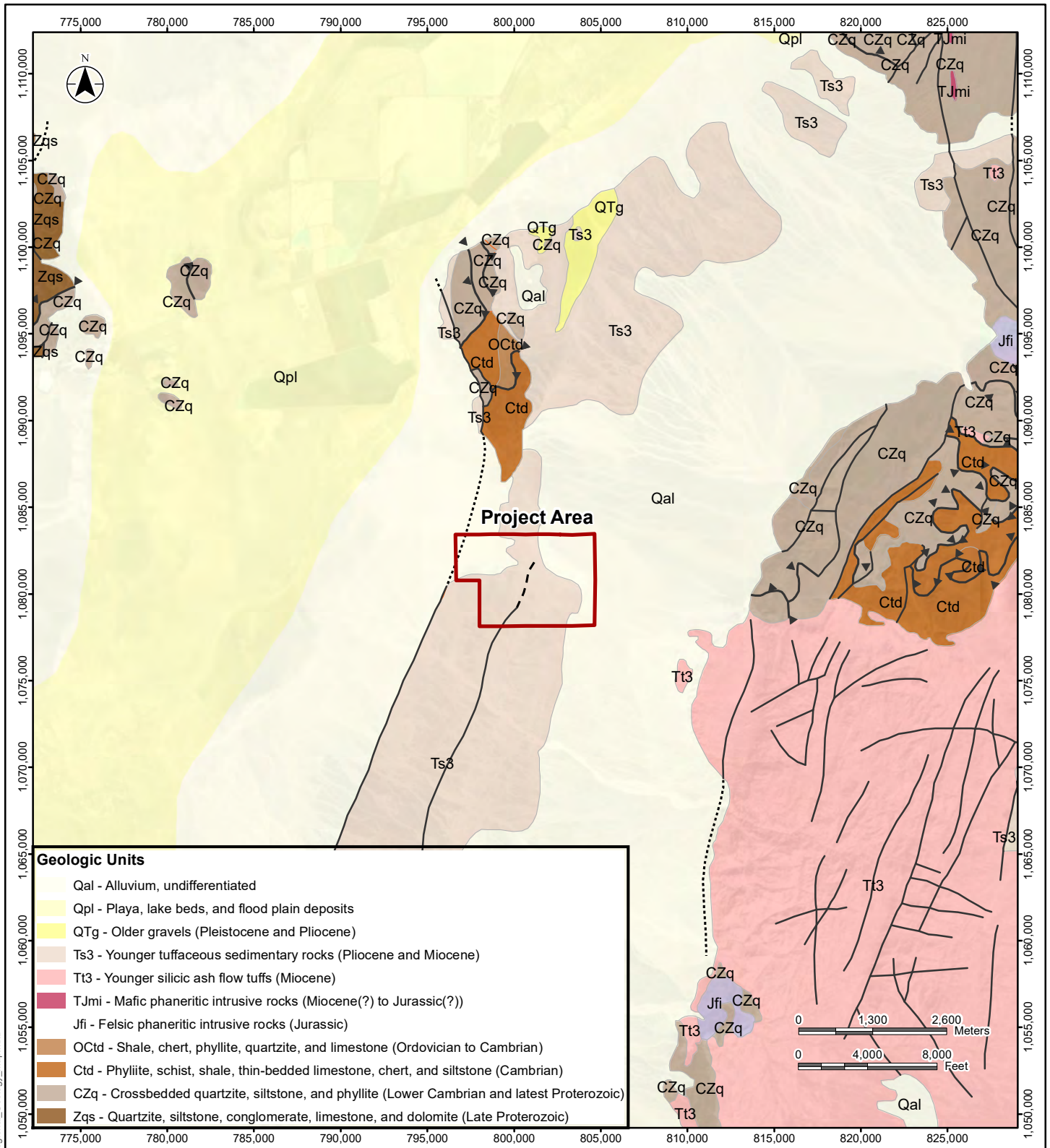
The claystone was initially volcanic ash that was deposited regionally during the late Miocene to early Pliocene epoch. The volcanic ash was mixed with local sediments and reworked from an ash fall to a water laid ash rich deposit or a lacustrine/lakebed deposit. The outcropping volcanic ash-rich sediments is eroded in areas, subsequently forming a badland terrain.

There are five main units that are observed on the Project. These units are:

1. Recent alluvium;
2. Lithium-bearing tuffaceous mudstone that has alternating beds of silt and mudstones, volcanic ash, and hard tuffaceous beds up to a meter thick deposited in a lacustrine environment;
3. Lithium-bearing green claystone;
4. Lithium-bearing green claystone with interbedded sand lenses; and
5. Brown sandstone with minor clay lenses that contain little to no lithium;







**Geologic Units**

Qal	Alluvium, undifferentiated
Qpl	Playa, lake beds, and flood plain deposits
QTg	Older gravels (Pleistocene and Pliocene)
Ts3	Younger tuffaceous sedimentary rocks (Pliocene and Miocene)
Tt3	Younger silicic ash flow tuffs (Miocene)
TJmi	Mafic phaneritic intrusive rocks (Miocene(?) to Jurassic(?))
Jfi	Felsic phaneritic intrusive rocks (Jurassic)
OCtd	Shale, chert, phyllite, quartzite, and limestone (Ordovician to Cambrian)
Ctd	Phyllite, schist, shale, thin-bedded limestone, chert, and siltstone (Cambrian)
CZq	Crossbedded quartzite, siltstone, and phyllite (Lower Cambrian and latest Proterozoic)
Zqs	Quartzite, siltstone, conglomerate, limestone, and dolomite (Late Proterozoic)

**Legend**

- ..... Concealed fault
- - - Inferred fault
- Known fault
- ▲ Known thrust fault
- Clayton Valley Lithium Clay (CVLC) Project Area

**Notes**  
 1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US  
 2. Data Source: Geologic Map of Nevada, U.S. Geological Survey Data Series 249; basemap: World Imagery, Esri

**Stantec** **SPEARMINT RESOURCES INC.**

TECHNICAL REPORT CVLC PROJECT

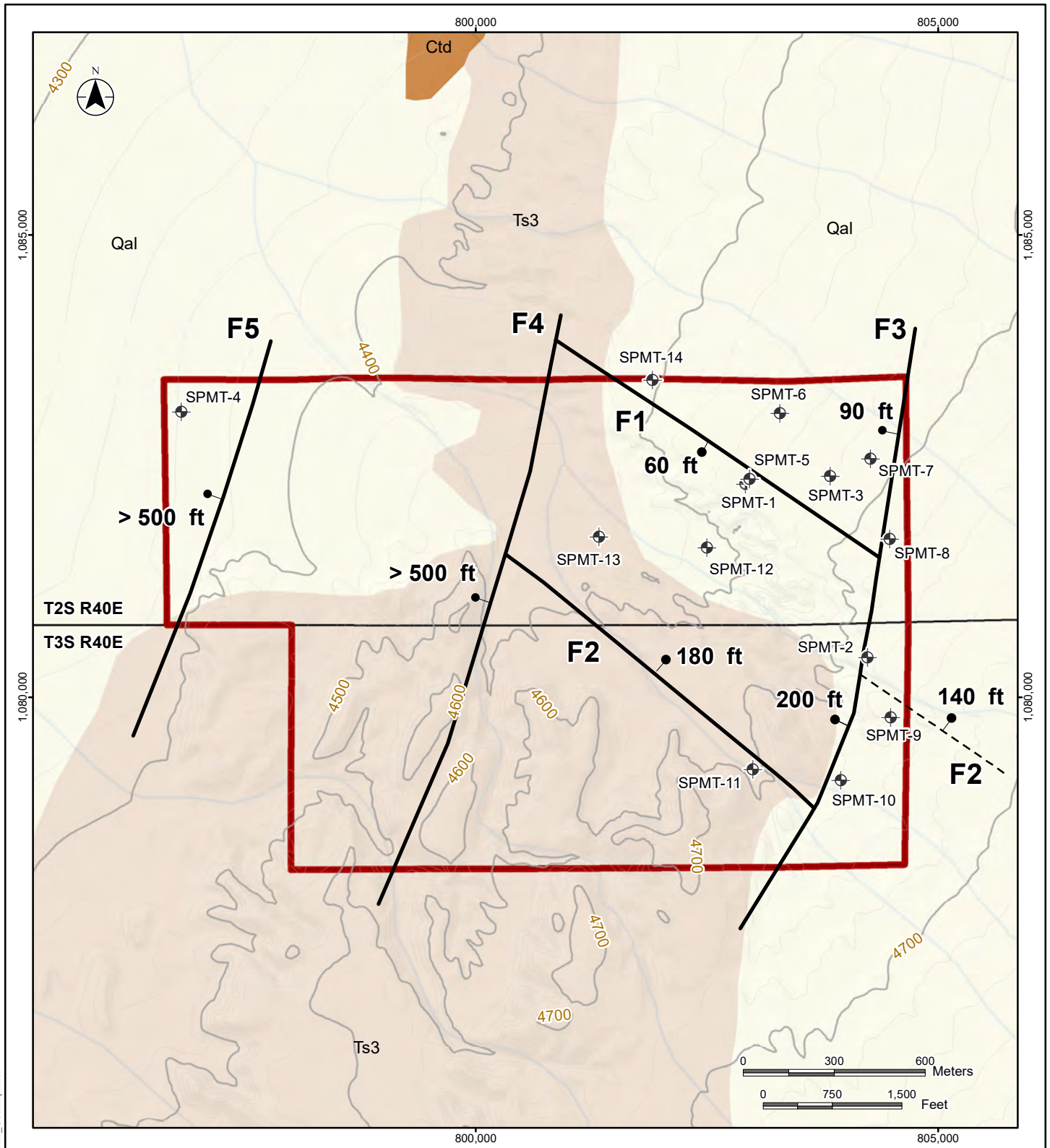
**Regional Geology Map**

**Figure 7-1**

DRAWN BY: J.K.  
 CHKD BY: D.L.  
 DATE: 21/06/09

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**Legend**

- Drill Hole
- Geologic Model Fault Trace  
Ball and bar on downthrown block with approximate displacement in feet
- Fault Inferred
- Topographic Contour 100 feet
- Topographic Contour 20 feet

Clayton Valley Lithium Clay (CVLC) Project Area

Township and Range

**Lithologic Units**

- Qal - Alluvium, undifferentiated
- Ts3 - Younger tuffaceous sedimentary rocks (Pliocene and Miocene)
- Ctd - Phyllite, schist, shale, thin-bedded limestone, chert, and siltstone (Cambrian)



TECHNICAL REPORT CVLC PROJECT

**Property Geology Map**

**Figure 7-2**

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

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Notes  
 1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US  
 2. Data Source: Geologic Map of Nevada, U.S. Geological Survey Data Series 249- modified by Stantec; basemap: National Geographic World Map, Esri  
 Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

### 7.2.1 Property Structure

The Project has undergone at least two generations of faulting. The first fault set is a high angle normal fault set that strikes NW to SE (F1 and F2) that is subsequently cut by a high angle normal fault set that strikes NNE to SSW (F3 and F4). This latter fault set may be associated with regional range front faulting. In total, there appears to be three range front-type faults (F3, F4 and F5). The approximate displacements along these two faults sets are shown Figure 7-2. The impacts of these faults on the near surface lithologies are illustrated in the N-S and W-E cross-sections shown in Figure 7-3. Range front faults F4 and F5 have displaced the near surface lithologies observed in the drillhole records to depths more than 500 ft and as such the area west of the F4 fault is not interpreted to mostly covered with thick (< 100 ft) sequences of Quaternary valley-fill alluvial deposits associated with these valley-forming range front faults.

### 7.2.2 Alteration of the Units

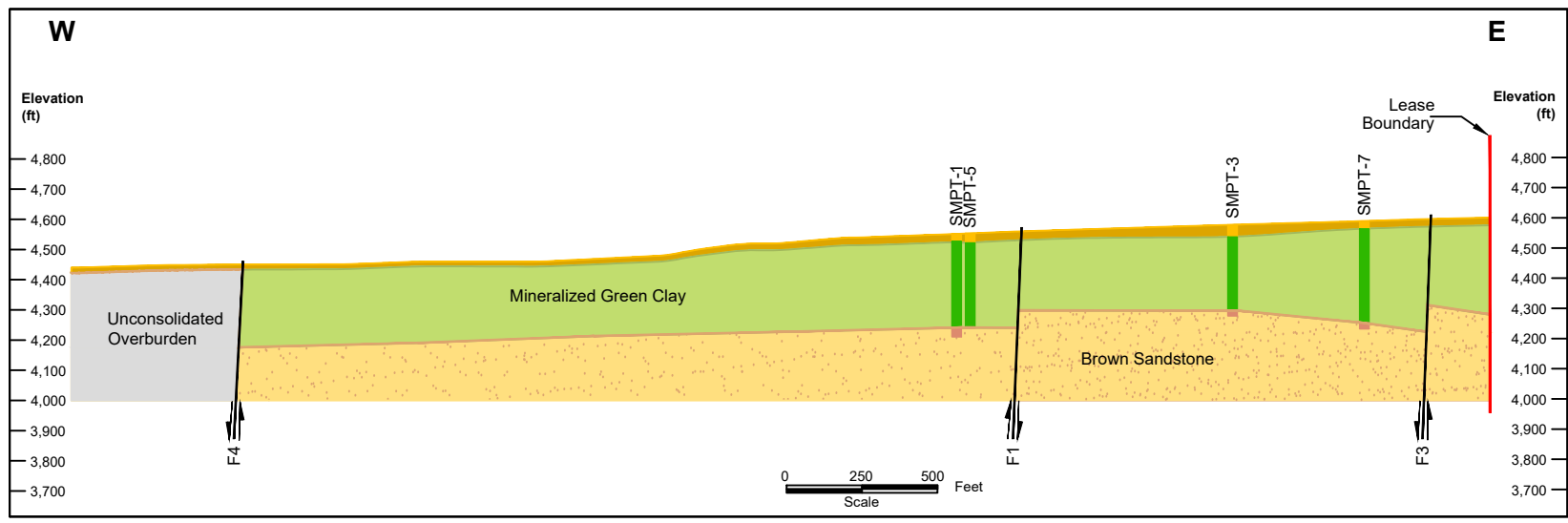
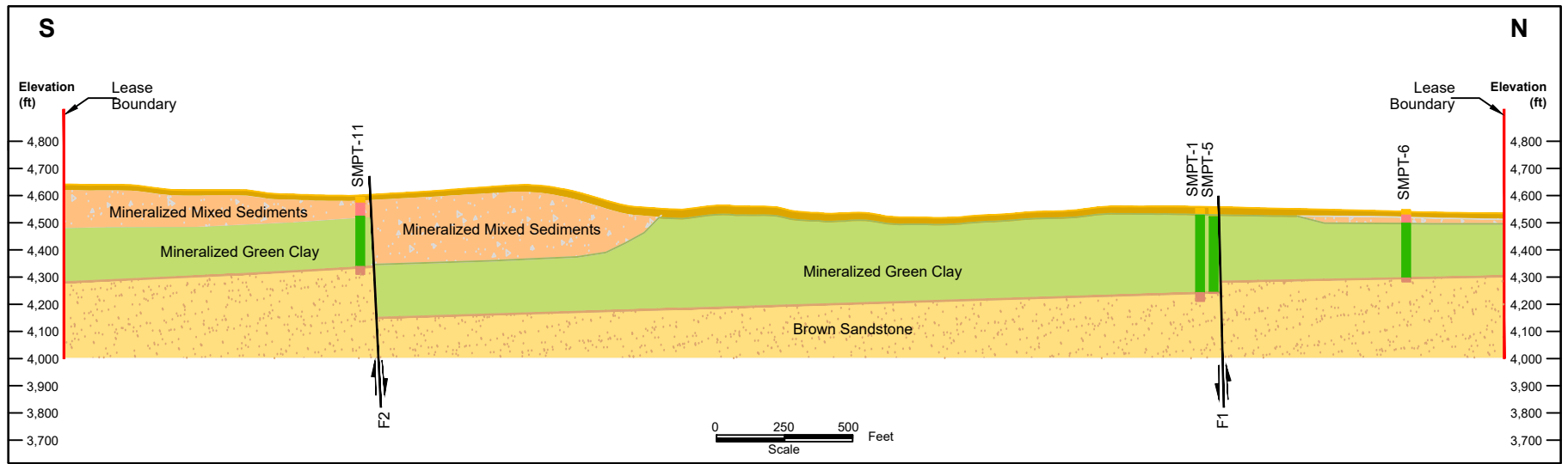
Hydrothermal alteration is not present in the Project area. Alteration is primarily in the form of devitrification of the volcanic ash that resulted in the formation of clay minerals, and the release of lithium into the formation. Oxidation has penetrated the claystone section and resulted in some portions of the section changing colour from olive green to tan. The oxidation appears to not have affected the lithium content within the claystone (Bain, 2018).

## 7.3 Property Mineralization

Lithium mineralization in the Project area primarily bound in claystones. These claystones outcrop along drainage valleys and are also identified in drilling campaigns. The interpreted subsurface distribution of these mineralized claystones, comprising mixed sediments (tuffaceous mudstone, unit 2) and green clay (unit 3 plus 4), are illustrated in Figure 7-3 cross sections. The mixed sediments gradationally overly the green clays and are positively weathering relative to the green clay below. The majority (greater than 80%) of the mineralized claystone comprises green clay.

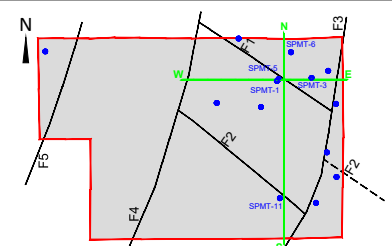
The dimensions of the mineralized claystone on the Project cover an area of approximately 2.2 km<sup>2</sup> (0.87 square miles) east of Range Front fault F4, as shown in Figure 7-2. In the Project area the mineralized claystone is below a weathered surface. Mineralized claystone is not yet identified west of the F4 Range Front fault.





- Legend**
- Surface Weathering
  - Unconsolidated Overburden
  - Mineralized Mixed Sediments
  - Mineralized Green Clay
  - Brown Sandstone
  - Geologic Model Fault Trace
  - Lease Area

- Drill Hole Lithology**
- Alluvium
  - Mineralized Mixed Sediments
  - Mineralized Green Clay
  - Brown Sandstone



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**Structural Cross Sections**

Figure 7-3

DRAWN BY: M.B  
 CHKD BY: D.L  
 DATE: 21 06 08

Fig\_7-3\_14-5\_Structural\_and\_Resource Model Sections.dwg  
 V:\1295\active\129500403\Discipline\Geology\Geospatial\CAD

## 8 DEPOSIT TYPES

Lithium deposit are hosted in pegmatites, continental brines, and clays. Where observed, elevated lithium concentrations in clay deposits occur in hydrologically closed basins that contain silicic volcanic rocks. These deposits are commonly ash-rich, lacustrine rocks that contain swelling clays (Asher-Bolinder, 1991). Common accessory rocks include volcanic flows and detritus, alluvial-fan and -flat and lacustrine rocks (Asher-Bolinder, 1991).

The USGS presented a descriptive model of lithium in smectites of closed basins in the 2011 Open File 11A. This model, identified as Model 25l.3(T) in the publication, proposed three forms of genesis for clay lithium deposits: the alteration of volcanic glass to lithium-rich smectite; precipitation from lacustrine waters; and incorporation of lithium into existing smectites. In each case, the depositional/diagenetic model is characterized by abundant magnesium, silicic volcanics, and an arid environment (Asher-Bolinder, 1991). Typical ore body dimensions for this deposit type are proposed to be up to several metres in thickness and to extend laterally by a few kilometres.

The structural setting, host lithologies, and mineralization observed on the Project are similar to the lithium-bound clay model, identified as Model 25l.3(T), that is proposed by Asher-Bolinder (1991).

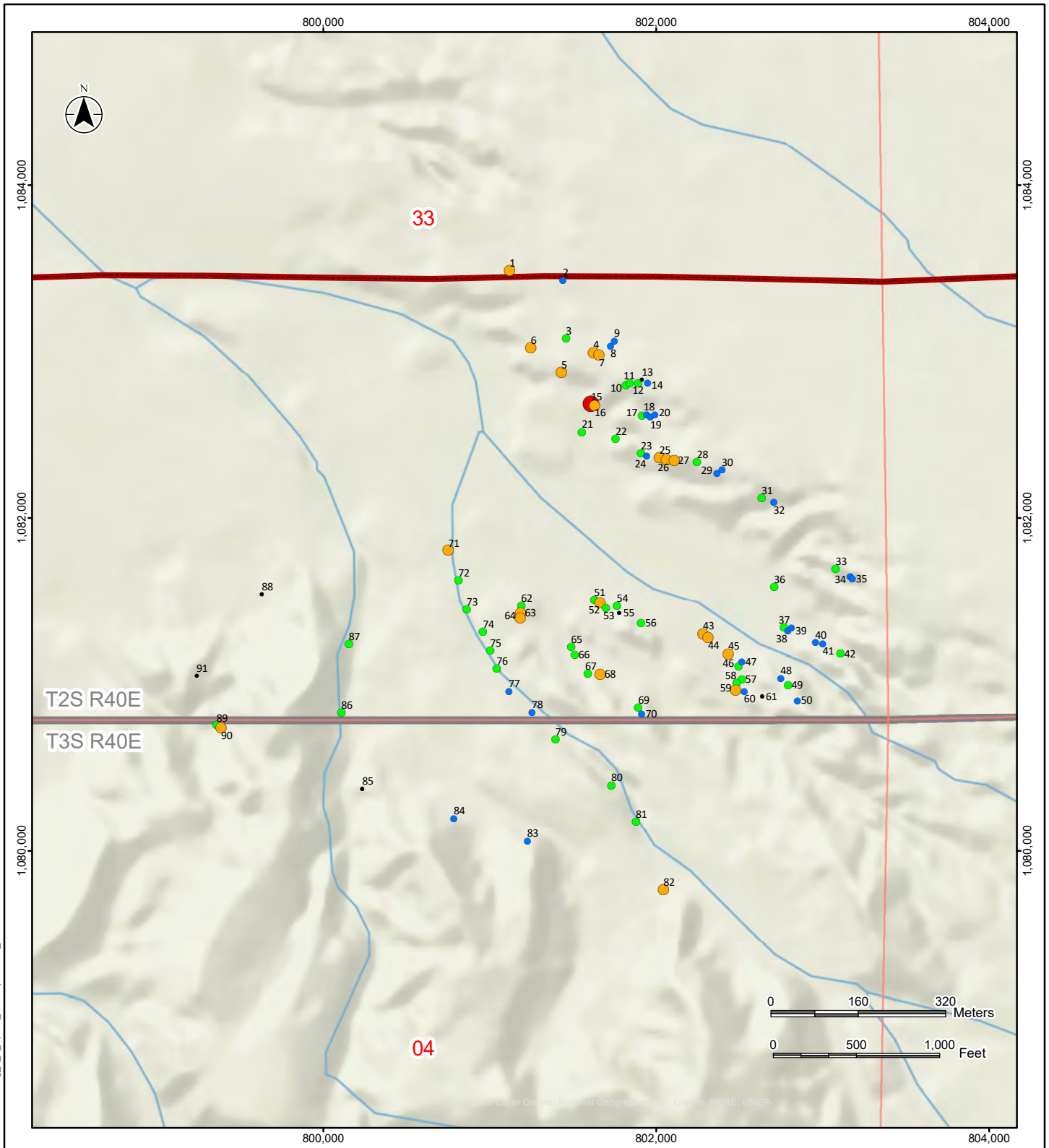


## 9 EXPLORATION

### 9.1 Surface Sampling

Spearment completed a surface sampling program in March 2017. Ninety-one samples were collected during this program and were analysed by ultra trace aqua regia Inductively Coupled Plasma - Mass Spectrometry analyses (method ME-MS41) for 51 elements. Sample results returned an average lithium value of 843 ppm Li with the highest Li value being returned from 1,630 ppm Li (Sample SM-15). The locations and Li results of the outcrop samples are shown in Figure 9-1.





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**Legend**

- 88 Sample Number
- Clayton Valley Lithium Clay (CVLC) Project Area
- Section

**Lithium (ppm)**

- 285 - 500
- 501 - 750
- 751 - 1000
- 1001 - 1250
- 1251 - 1630

**Notes**

1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US
2. Data Source: basemap Esri National Geographic World Map

TECHNICAL REPORT CVLC PROJECT

**2017 Surface Sample Locations**

DRAWN BY: M.B.  
 CHKD BY: A.T.  
 DATE: 21/06/09

**Figure 9-1**

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

## 10 DRILLING

There is no evidence of any historic drilling on the Project area.

All drilling on the Project was Harris Exploration Drilling and Associates of Escondido, California. The purpose of the 2018 and 2020 drill campaigns were primarily to assess the lithium potential of the claystone. The 2018 drilling included both Reverse Circulation (RC) and NQ core drilling, while the 2020 drill campaign was only cored.

Table 10.1 lists the drill hole collar locations, depth, year drilled, hole type, and hole azimuth and dip. The collar coordinates are listed in UTM NAD83 coordinate system. The hole collar locations and elevations were recorded using a handheld GPS device. Figure 10-1 shows the location of the drill holes.

**Table 10.1**  
**Summary of Drilling on Property**

Hole Name	Hole Type	Year	Northing (NAD 83)	Easting (NAD 83)	Elevation (ft)	Depth (ft)	Azimuth	Dip
SPMT-1	RC	2018	4,174,732	452,675	4,552	340	0	-90
SPMT-2	RC	2018	4,174,152	453,067	4,631	400	0	-90
SPMT-3	Core	2018	4,174,752	452,954	4,581	300	0	-90
SPMT-4	RC / Rotary	2018	4,175,001	450,820	4,361	1,200	0	-90
SPMT-5	Core	2020	4,174,747	452,689	4,553	312	0	-90
SPMT-6	Core	2020	4,174,961	452,792	4,547	264	0	-90
SPMT-7	Core	2020	4,174,807	453,088	4,590	352	0	-90
SPMT-8	Core	2020	4,174,541	453,147	4,615	352	0	-90
SPMT-9	Core	2020	4,173,954	453,141	4,646	365	0	-90
SPMT-10	Core	2020	4,173,749	452,973	4,643	352	0	-90
SPMT-11	Core	2020	4,173,791	452,683	4,593	282	0	-90
SPMT-12	Core	2020	4,174,525	452,544	4,489	115	0	-90
SPMT-13	Core	2020	4,174,564	452,189	4,468	272	0	-90
SPMT-14	Core	2020	4,175,078	452,374	4,497	352	0	-90





**TECHNICAL REPORT – Clayton Valley Lithium Clay Project, Nevada, USA**

The core was split lengthwise for assay. Half of the core was sent to ALS in Reno, and the remainder is in a dry core warehouse at Liberty Mine, Nevada. According to Bain (2018), Spearmint geologists and field personnel implemented a quality assurance quality control process to ensure that the RC chip sampling, core splitting and analyses of all samples was conducted in accordance with industry standards. (p. 23)

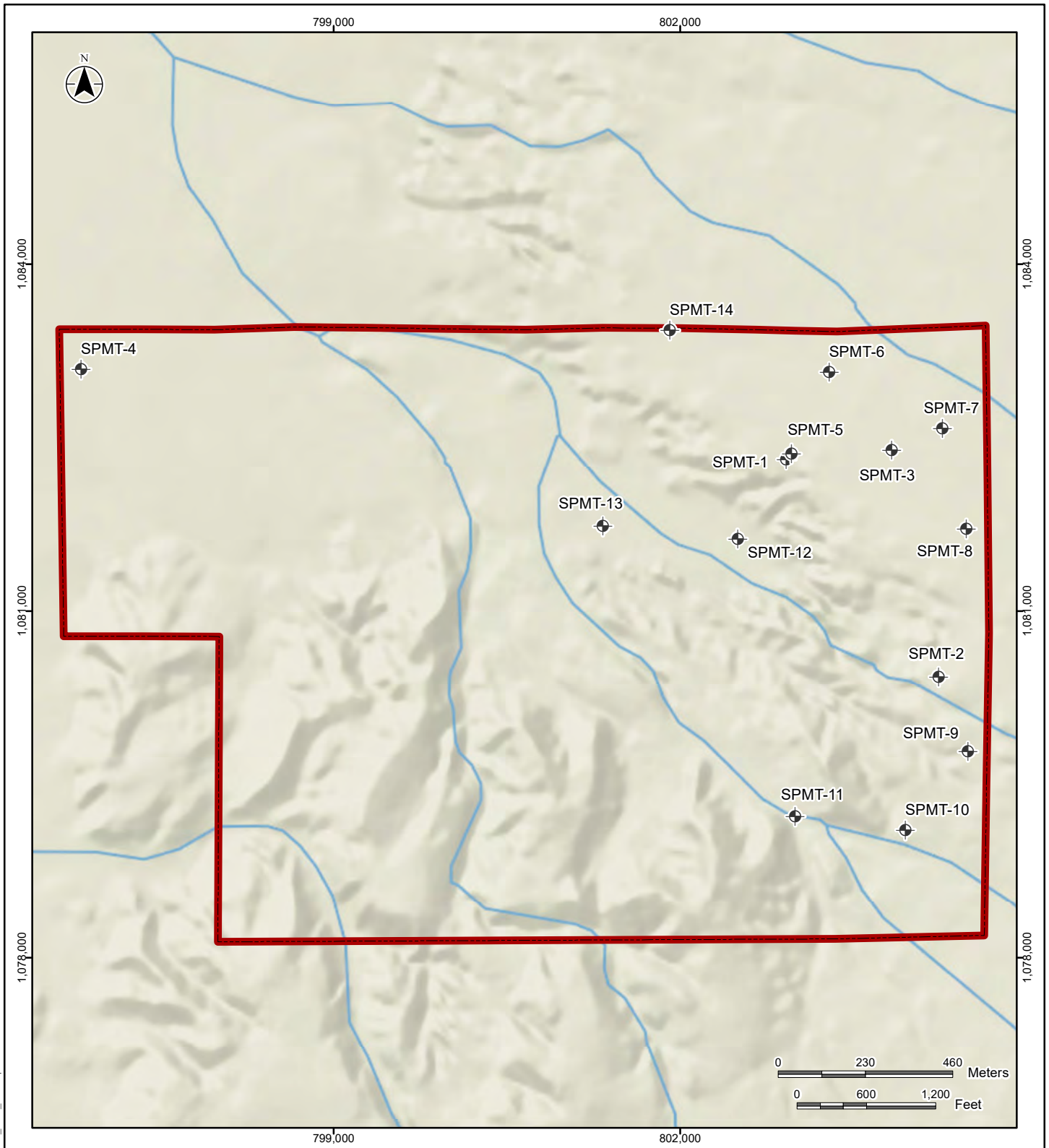
The Qualified Person on April 14, 2021 reviewed the core during the sampling program. There did not appear to any evidence of drilling, sampling, or core recovery factors that could have materially impacted the accuracy and reliability of the results.

Table 10.2 shows a summary of the assay highlights. As presented in Table 10.1, all drill holes are vertical, and therefore the clay-bound lithium deposit is flat lying. As such, the sample length and the true thickness of the mineralization and the orientation of the mineralization that is shown in Figure 10.2 are true lengths.

**Table 10.2  
Summary of Drilling on Project Area**



Hole Name	From (ft)	To (ft)	Li (ppm)
SPMT-1	175	210	1,140
SPMT-3	175	190	1,073
SPMT-5	95	115	1,078
SPMT-5	185	215	1,398
<b>inc</b>	195	200	1,840
<b>inc</b>	205	210	1,650
SPMT-6	105	245	1,061
SPMT-7	210	265	1,214
SPMT-8	265	295	1,070
<b>inc</b>	240	245	1,550
SPMT-11	80	190	1,020
<b>inc</b>	105	110	1,490
SPMT-12	10	110	1,057
SPMT-13	50	85	1,014
SPMT-13	140	205	1,042
SPMT-14	15	70	1,046
<b>inc</b>	15	20	1,540
SPMT-14	110	140	1,017
SPMT-14	170	205	1,130
<b>inc</b>	175	180	1,730





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**Legend**

-  Drill Hole
-  Clayton Valley Lithium Clay (CVLC) Project Area

**Notes**

1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US
2. Data Source: drill holes - Spearmint Resources Inc.; basemap - National Geographic World Map, Esri.



TECHNICAL REPORT CVLC PROJECT

**Drill Hole Location Map**

**Figure 10-1**

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

## **11 SAMPLE PREPARATION, ANALYSES & SECURITY**

### **11.1 Sampling Method and Approach**

Reverse Circulation Drilling – Samples were collected via a splitter on the drill on five-foot intervals and then placed in properly labelled sample bags. Upon completion of the hole the samples were shipped to ALS Lab in Reno where the samples were dried, crushed and pulverized and then shipped to ALS Lab in Vancouver, British Columbia for analyses.

NQ Core Drilling – Core boxes were taken to the core storage facility where the core was marked in five-foot intervals, then split by hand into equal portions longitudinally and bagged in properly marked bags. All logging and reference were by footage, to conform with drill contractors' practice then converted to metres as needed for modelling and sections. Upon completion of the core logging and sampling for each hole, the samples were shipped to ALS Lab in Reno where the samples were dried, crushed, pulverized and then shipped to ALS Lab in Vancouver, British Columbia for analyses. All core is palletized and stored in a dry core facility at Liberty Mine, which is approximately 30 kilometres north of Tonopah and a few kilometres north of the Crescent Dunes solar energy project.

### **11.2 Laboratory Analyses**

ALS USA Inc., located at 4977 Energy Way, Reno, Nevada is an ISO 9001 and ISO/IEC17025 certified commercial laboratory and is independent of the issuer and the vendor. At the laboratory, samples were dried and underwent fine crushing so that 90% passed 2mm (method CRU-31), further riffle split the sample (method SPL-21), and further pulverized the material so that 85% passed 75µm (method PUL-31). A subsample of this material was subjected to 51 element analyses via Ultra Trace Aqua Regia Inductively Coupled Plasma - Mass Spectrometry (method ME - MS41) in 2018, and lithium analyses by Aqua Regia and Inductively Coupled Plasma - Atomic Emission Spectroscopy (method LI-ICP41) in 2020. ALS provided in-house quality control with standards, blanks and duplicates with the results being evaluated prior to release. All results are transmitted electronically to the company's contract geologist (Frank Bain) and management.

### **11.3 Quality Assurance and Quality Control**

Certified reference material was not provided by Spearmint for assay standards. Instead, Spearmint relied on ALS Lab and their use of their own standards, blanks, and repeated samples to monitor assay results. The results of the ALS QC review were that the analyses were within the lower and upper bounds of the target range.

### **11.4 Security**

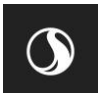
RC samples were bagged at the drill site and taken to the core shack / storage facility until being shipped to ALS in Reno. The core was placed in waxed core boxes at the drill site that hold 10 feet of core and then taken to the core shack / storage facility where it was dry split. Half the core was



then placed in a sample bag and shipped to ALS in Reno. The remaining core was kept in the core box for reference and / or further testing and placed in secure storage in a dry warehouse at Liberty Mine.

**11.5 Adequacy of Laboratory Procedures and Sample Security**

It is the opinion of the Author(s) that the sample preparation, analytical procedures, and security measures that were implemented by Spearmint are adequate.



## 12 DATA VERIFICATION

The goals of the site investigation by the Qualified Person were three-fold: 1) to validate that the proposed mineralized system conformed to geologic constraints of a clay bound lithium deposit type; 2) to validate sample locations and collect samples so that an independent assessment could be completed to assess the presence of lithium in the core and physically on the Project through surface sample collection; and 3) to verify the locations of holes drilled during the two campaigns.

The site visit to the Project area and core facility was completed on April 6, April 11, and April 14, 2020. Most areas of the Project area are easily accessible by road.

### **Deposit Type Validation**

The structural setting, host lithologies, and mineralization observed on the Project resemble the lithium-bound clay model proposed by Asher-Bolinder (1991). It is the opinion of the Author that the CVLC Project is similar to the description outlined in Model 25I.3(T) of Asher-Bolinder (1991).

### **Material Sampling Validation**

The Qualified Person(s) completed sampling on the Project during the site investigation. The samples were directly shipped by the Qualified Person to AGAT Laboratories, Calgary, Alberta on April 15, 2021. A Chain of Custody document was implemented by AGAT Laboratories to track the sample custody transfer. Stantec directly received the final analytical results from AGAT Laboratories on June 2, 2021.

Table 12.1 shows a comparison of samples collected during the site investigation relative to previously sampled areas. It is the opinion of the independent Qualified Person that when considering the practical limit of error for the types of sample collection methods, that the analytical results presented by Spearmint were accurate.



**Table 12.1**  
**Site Investigation Lithium Assay Validation**

Check Sample Number	Sample Type	Stantec Li (%) <sup>1</sup>	Northing <sup>2</sup>	Easting <sup>2</sup>	Interval From (feet)	Interval To (feet)	Original Sample Number	Spearmint Li (%) <sup>3</sup>
2019384701	Surface grab	0.05	4,174,746	452,398	surface		n/a	
2019384702	Surface grab	0.06	4,174,753	452,386	surface		n/a	
2019384703	Surface grab	0.05	4,174,756	452,375	surface		n/a	
2019384704	Surface grab	0.09	4,174,756	452,371	surface		n/a	
2019384705	Surface grab	0.06	4,174,598	452,646	surface		n/a	
2019384706	Surface grab	0.07	4,174,578	452,639	surface		n/a	
2019384707	Surface grab	0.02	4,174,552	452,668	surface		n/a	
2019384708	Surface grab	0.06	4,174,526	452,707	surface		n/a	
2019384709	Surface grab	0.07	4,174,524	452,727	surface		n/a	
2019384710	Surface grab	0.06	4,174,544	452,682	surface		n/a	
2019384722	Core	0.13	4,174,961	452,792	125	130	SPMT-6	0.14
2019384724	Core	0.15	4,175,078	452,374	175	180	SPMT-14	0.17
2019384726	Core	0.12	4,174,564	452,189	75	80	SPMT-13	0.12
2019384727	Core	0.11	4,174,525	452,544	65	70	SPMT-12	0.11
2019384728	Core	0.12	4,173,749	452,973	230	235	SPMT-10	0.13
2019384729	Core	0.09	4,173,749	452,973	235	235.5	SPMT-10	0.08
2019384731	Core	0.13	4,174,807	453,088	240	245	SPMT-7	0.16
2019384732	Core	0.11	4,174,807	453,088	245	150	SPMT-7	0.10
2019384733	Core	0.08	4,174,541	453,147	170	175	SPMT-8	0.08
2019384734	Core	0.06	4,173,954	453,141	285	290	SPMT-9	0.06

<sup>1</sup> UTM NAD83 Zone 11 coordinate system

<sup>2</sup> Sodium Peroxide Fusion-ICP-OES finish

<sup>3</sup> Li by Aqua Regia & ICP-AES finish



**Drill Hole Location Validation**

The Author observed drill pads that were reclaimed. Some of the reclaimed locations had pickets showing the hole name. The Author used a handheld GPS to validate the drill locations, which are listed relative to their accompanying holes in Table 12.2.

**Table 12.2**  
**Property Hole Location Validation**

Drill Hole Name	Historical Drill Hole Locations			2021 Site Investigation Drill Hole Locations			Difference (m)	
	Zone	Northing (NAD 83)	Easting (NAD 83)	Zone	Northing (NAD 83)	Easting (NAD 83)	Δ Northing	Δ Easting
SPMT-2	11S	4,174,152	453,067	11S	4,174,152	453,067	0	0
SPMT-5	11S	4,174,747	452,689	11S	4,174,745	452,690	2	2
SPMT-6	11S	4,174,961	452,792	11S	4,174,963	452,791	2	1
SPMT-7	11S	4,174,807	453,088	11S	4,174,807	453,085	0	3
SPMT-8	11S	4,174,541	453,147	11S	4,174,547	453,148	6	1
SPMT-9	11S	4,173,954	453,141	11S	4,173,953	453,139	1	2
SPMT-10	11S	4,173,749	452,973	11S	4,173,748	452,973	1	0
SPMT-11	11S	4,173,791	452,683	11S	4,173,793	452,683	2	0
SPMT-13	11S	4,174,564	452,189	11S	4,174,569	452,187	5	2
SPMT-14	11S	4,175,078	452,374	11S	4,175,079	452,375	1	1

**12.1 Limitation to Data Validation by Qualified Person**

Limitations to the validation that the Author was able to complete are listed below:

- The Author was not involved in the Project prior to April 2021, and did not complete a field visit until April 2021, and therefore cannot validate the field procedures used during drilling and sample collection.
- Laboratory inspections were not completed by the Author.



### 13 MINERAL PROCESSING AND METALLURGICAL TESTING

There are a wide variety of lithium-bearing deposits with a significant range of variation in internal chemistries. As a result, there are a variety of different optimal extractions techniques for each type of mineralogy involved. Lithium-bound clay, the style of mineralization that hosts lithium on the Clayton Valley Lithium Clay Project, are responsive to direct acid leaching at ambient temperature.

To directly assess the extractability of the mineralized clay-bearing material from the Project area, Spearmint created a composite sample (4653-001) by combining splits of 60 interval samples from three drill holes. The average lithium head grade for the composite sample was 964 mg/kg. Sample 4653-001 was then sent to The Mineral Lab, Inc., located in Golden Colorado, for X-ray diffraction (XRD) analyses, the results of which are shown in Table 13.1.

**Table 13.1**  
**Composite Sample 4653-001 XRD Analyses**

Mineral Name	Chemical Formula	Approx. Wt %
Quartz	SiO <sub>2</sub>	<5
Plagioclase Feldspar	(Na,Ca)Al(Si,Al) <sub>3</sub> O <sub>8</sub>	13
Potassium Feldspar	(K,Na)AlSi <sub>3</sub> O <sub>8</sub>	<5
Mica/illite	(K,Na,Ca)(Al, Mg,Fe) <sub>2</sub> (Si,Al) <sub>4</sub> O <sub>10</sub> (OH,F) <sub>2</sub>	18
Sepiolite	Mg <sub>4</sub> Si <sub>6</sub> O <sub>15</sub> (OH) <sub>2</sub> 20H <sub>2</sub> O	5
Clinoptilolite	(Na,K,Ca) <sub>6</sub> (Si,Al) <sub>36</sub> O <sub>72</sub> 20H <sub>2</sub> O	5
Calcite	CaCO <sub>3</sub>	10
Amorphous	?	<30
Unidentified	?	<5

Following XRD analysis, six leach tests were completed on the composite sample 4653-001 by McClelland Laboratories Inc. (McClelland), located in Sparks, Nevada. The final results were presented in a report dated June 4, 2021. The tests were completed by combining 0.5 kg splits from composite sample 4653-001, at a nominal 106µm feed size, with water and either sulfuric acid or hydrochloric acid. Slurries were agitated for 24 hours at ambient temperature before being filtered to recover pregnant solution. The leach test results are presented in Table 13.2.



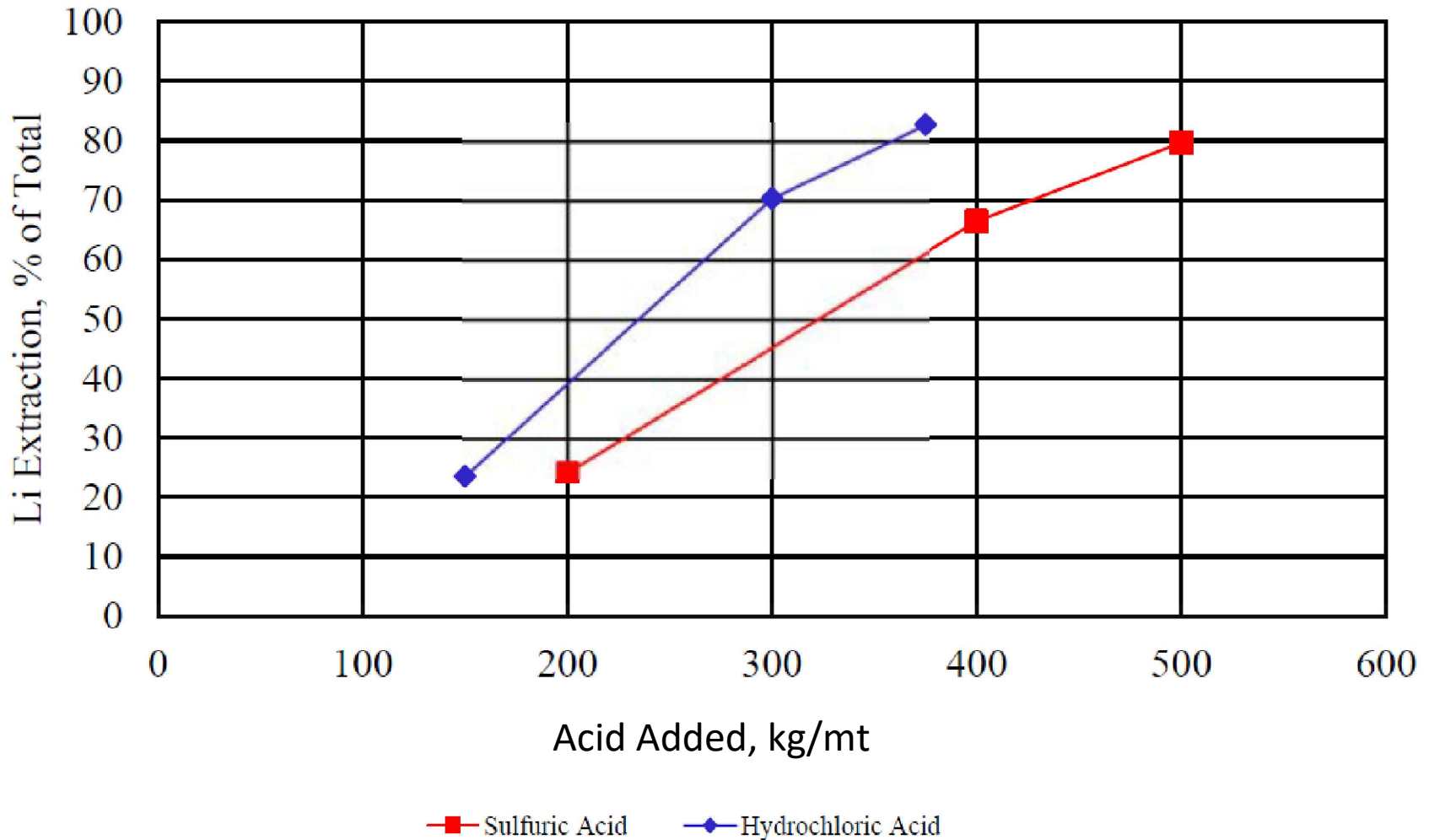


**Table 13.2**  
**Summary Agitated Leach Test Results for Sample 4653-001**

Acid Used	Acid Usage, kg/mt		Li Extraction	Li Head Grade, mg/kg	
	Added	Consumed	%	Calculated	Assayed
H <sub>2</sub> SO <sub>4</sub>	200	196	24.3	909	799
H <sub>2</sub> SO <sub>4</sub>	400	315	66.4	959	799
H <sub>2</sub> SO <sub>4</sub>	500	329	79.6	1,091	799
HCl	150	N/A	23.6	885	799
HCl	300	N/A	70.3	950	799
HCl	375	N/A	82.7	1,062	799

The conclusion of McClelland was that high lithium extractions were achieved by both sulfuric acid (up to 79.6%) or hydrochloric acid (up to 82.7%). Figure 13-1 shows that lithium extraction continues with increased acid addition, and that additional extraction may be possible with higher acid additions.





Lithium Extraction vs. Acid Addition, Agitated Leach Tests,  
SpearMint Composite 4653-001, Nominal 106µm Feed Size



TECHNICAL REPORT CVLC PROJECT

**Lithium Extraction  
vs. Acid Addition**

Figure 13-1

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DATE: 21 06 09	V:\1295\active\129500403\Discipline\Geology\Geospatial\CAD

## 14 MINERAL RESOURCE ESTIMATES

### 14.1 Approach

In accordance with the requirements of NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards, Qualified Persons employed at Stantec validated the drill hole and sample data set and created a geologic model for the purposes of generating lithium resource estimates from a lithium clay deposit within the Project area.

Spearmint has not previously prepared mineral resource estimates on the Project, and there are no reports of any previous parties doing so in the past.

The geologic model construction outlined below was used as the basis for estimating mineral resources on the Project.

### 14.2 Basis for Resource Estimation

NI 43-101 specifies that the definitions of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Guidelines be used for the identification of resources. The CIM Resource and Reserve Definition Committee have produced the following statements which are restated here in the format originally provided in the CIM Reserve Resource Definition document:

“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.”

The Definition of Resources is as follows:

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

“Material of economic interest refers to diamonds, natural inorganic material, or natural fossilized organic material including base and precious metals, coal, and industrial minerals.” Lithium falls under the industrial minerals’ category.

The committee went on to state that:

“The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and



sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of technical, economic, legal, environmental, socioeconomic and governmental factors. The phrase ‘reasonable prospects for eventual economic extraction’ implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. Interpretation of the word ‘eventual’ in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage ‘eventual economic extraction’ as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time.”

Extraction of lithium from lithium clay deposits is most similar to bulk mineral commodities such as coal and potash and as such eventual economic extraction can cover time periods in excess of 50 years depending on the size and concentration of lithium in the clay.

### **14.3 Data Sources**

Information used to compile the geologic models used for resource estimation included the following data provided by Spearmin:

- exploration drill hole logs;
- drill hole analytical data;
- surface sample analytical data and locations;
- surface topography data; and
- 2018 Technical Report (Bain, 2018).

The drill hole sample data included chip and core samples. Details on drilling and sampling methods are addressed in Sections 10 and 11 of this report. Although surface grab samples were collected and analysed in 2017, these sample results were not used in this geologic model. The locations of the drill holes used in the geologic model are shown in Figure 14-1.

Surface geological maps were obtained from the U.S. Geological Survey ([usgs.gov](http://usgs.gov)) and are freely available through open sources. Additional information acquired by Stantec and used in the development of this geologic model included surface topography data also available through open sources ([usgs.gov](http://usgs.gov)). The surface topography data was received as shape file contour data at 1:24,000 scale with a root mean square (RMS) accuracy of 1.55 m. The topography data was deemed accurate for the purposes of estimating resources on the Project and is shown in Figure 14-1.



#### 14.4 Model

The geologic model used for reporting of lithium resources was developed using Hexagon Mining’s geological modelling and mine planning software, MinePlan version 15.8-2. MinePlan is widely used throughout the mining industry for digital resource model development. Hexagon Mining’s suite of interpretive and modelling tools is well-suited to meet the resource estimation requirements for the Project.

The geologic model from which lithium resources are reported is a 3D block model. The model limits and block size are outlined in Table 14.1 and the plan viewed extent of the geologic model is shown on Figure 14-1. The model was developed using the Nevada State Plane West Zone NAD27 coordinate system and U.S. customary units.

**Table 14.1**  
**Block Model Parameters**

<b>Coordinate</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Range (ft)</b>	<b>Block (ft)</b>
Easting	796,500	804,800	8,300	50
Northing	1,078,000	1,083,600	5,600	50
Elevation	4,000	4,750	750	15

##### 14.4.1 Model Inputs

Inputs used in the construction of the geologic model and resource estimation include the following:

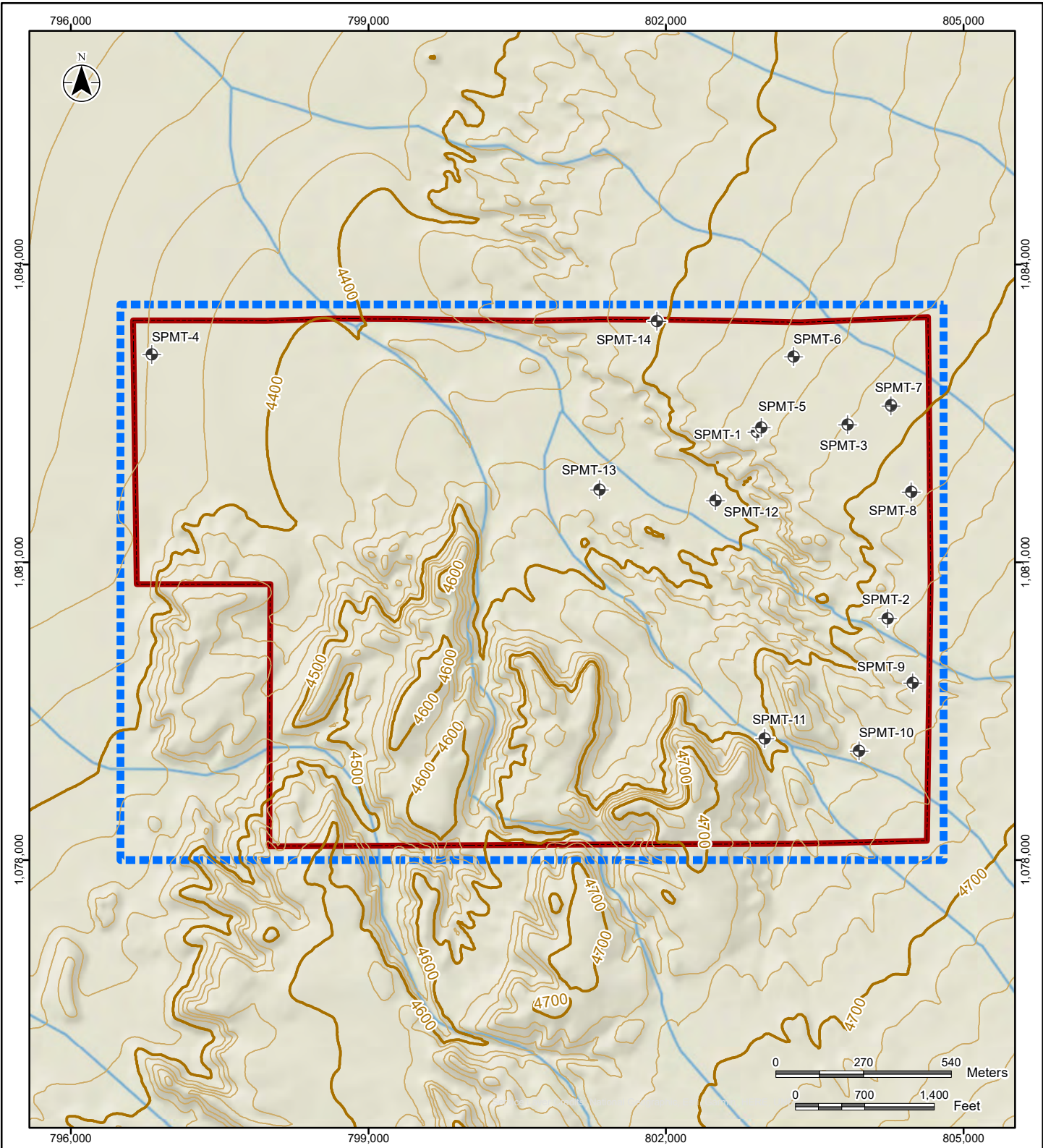
- Surface topography
- Surface geologic maps;
- Google Earth Pro© aerial photography;
- Drill hole locations;
- Drill hole chip and core log descriptions;
- 601 chip and core samples from 13 exploration holes;

##### 14.4.2 Surface Topography and Weathering

Public domain surface topography data was used to generate a 2D grid of surface topography using a triangulation algorithm. The 2D grid origin and resolution was the same as that used in the 3D block model as shown in Table 14.1. All model grid files used the same origin and resolution.

Depth of surface weathering was recorded from the log descriptions and estimated into a 2D-grid using an inverse distance square (IDW2) algorithm. A base of surface weathering elevation grid





**Legend**

- Drill Hole
- Topographic Contour 100 feet
- Topographic Contour 20 feet
- Clayton Valley Lithium Clay (CVLC) Project Area
- Model Boundary

**Notes**  
 1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US  
 2. Data Source: contours - National Elevation Dataset 10 meter resolution; basemap - National Geographic World Map, Esri.



TECHNICAL REPORT CVLC PROJECT

**Surface Topography and Model Limits Map**

**Figure 14-1**

DRAWN BY: J.K.  
 CHKD BY: D.L.  
 DATE: 21/06/09

C:\Data\Spear\Geospatial\ArcGIS\MXD\Fig\_14\_1\_Spear\_Topo\_Model\_Limits.mxd

was generated by subtracting depth of the surface weathering estimates from the surface topography elevation using software macros. Lithium samples taken within this weathering zone, recorded as alluvium in drill holes, were not considered for resource estimation due to inconsistencies in lithium concentrations due to surface weathering. Surface mapping of outcrop was not used to further constrain the depth of surface weathering as these contacts were determined to be soft boundaries from field observations.

#### **14.4.3 Structural Features**

Five high-angle normal faults were interpreted following review of surface geological maps, aerial photos, drill hole logs in cross section. These faults labelled F1 through F5 are illustrated on the Project area geology map shown in Figure 7-2 and the structural cross sections W-E and S-N shown in Figure 7-3. The most significant of these faults is F4, which is one of three NS trending range front faults, whose displacement is estimated to be greater than 500 ft (152 m) resulting in a juxtaposition of unmineralized unconsolidated overburden sediments in the west with mineralized lithium sediments in the east. NW striking Faults F1 and F2, located east of F4, are interpreted to be the earliest phase of faulting and impact the mineralized sediments with displacements ranging from 60 ft (F1) to 180 ft (F2). Fault F2 is interpreted to be offset by strike-slip movement along range front fault F3 in the east of the Project and displaces mineralized claystone, depending in fault block location, by between 200 ft and 90 ft as shown in Figure 7-2. A third Range Front fault (F5) has been identified further west of resource limiting F4 fault, displacement along this fault it is likely to be greater than 500 ft.

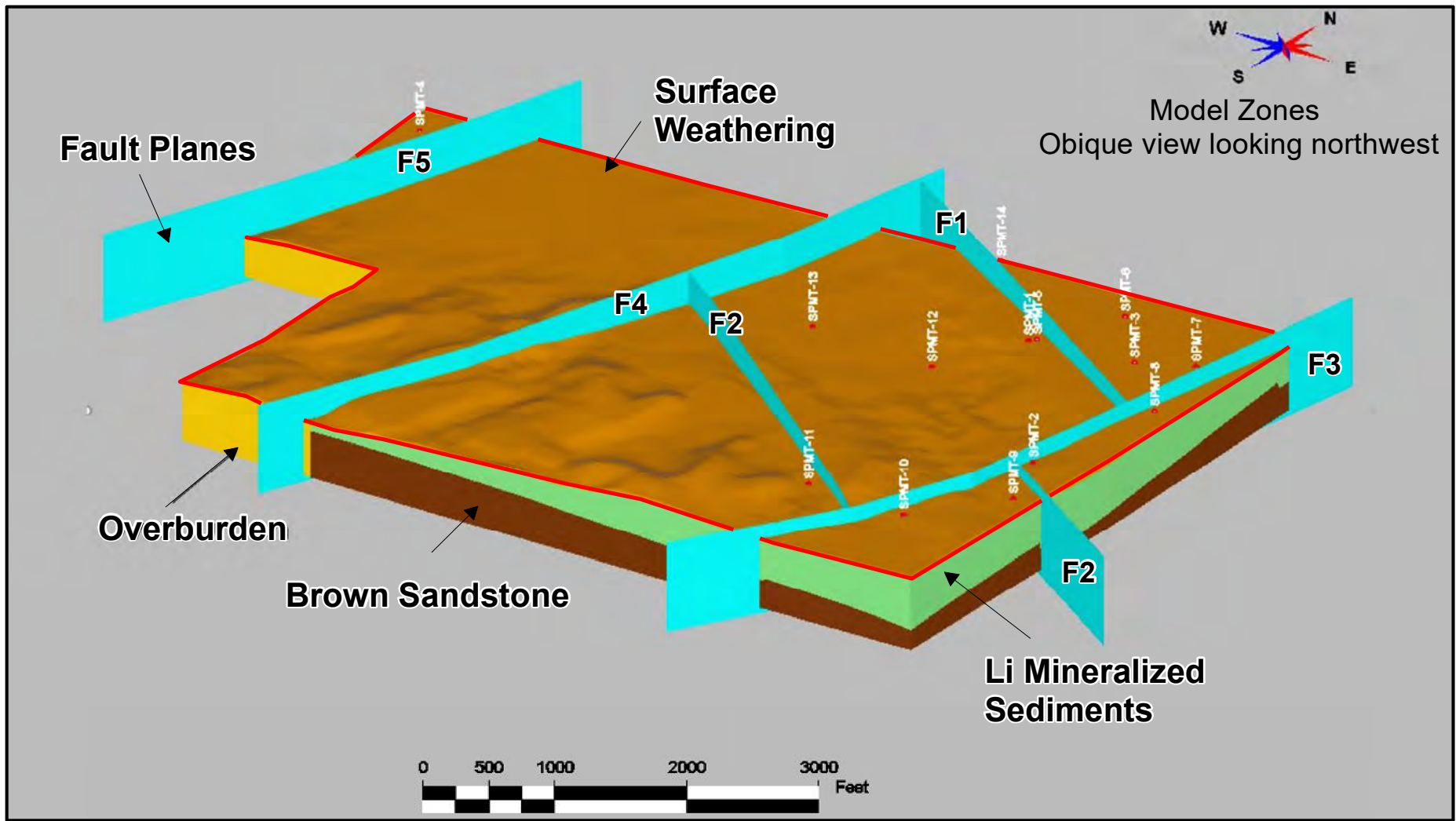
#### **14.4.4 Model Zones**

The geologic model is separated into four main stratigraphic zones, as indicated below, from top to bottom:

1. Waste Surface weathering (alluvium) zone;
2. Waste unconsolidated overburden sediments (basin fill);
3. Mineralized mixed sediments (tuffaceous claystone) and green claystone; and
4. Waste brown sandstone.

Wireframe solids generated from these zones are presented on Figure 14-2 showing an oblique view of the geologic model looking towards the northwest. Table 14.2 provides composite vertical thickness statistics from the exploration drill hole records for the waste and mineralized units listed above excluding unconsolidated overburden that is limited structural interpretation only. The majority of lithium mineralized zone (3) comprises green clay with overlying mixed sediments mostly limited to hilltops. The contact between the green clay and mixed sediments is gradational.





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**Legend**

- Clayton Valley Lithium Clay (CVLC) Project Area
- Fault Plane
- ▲ Drill Hole



TECHNICAL REPORT CVLC PROJECT

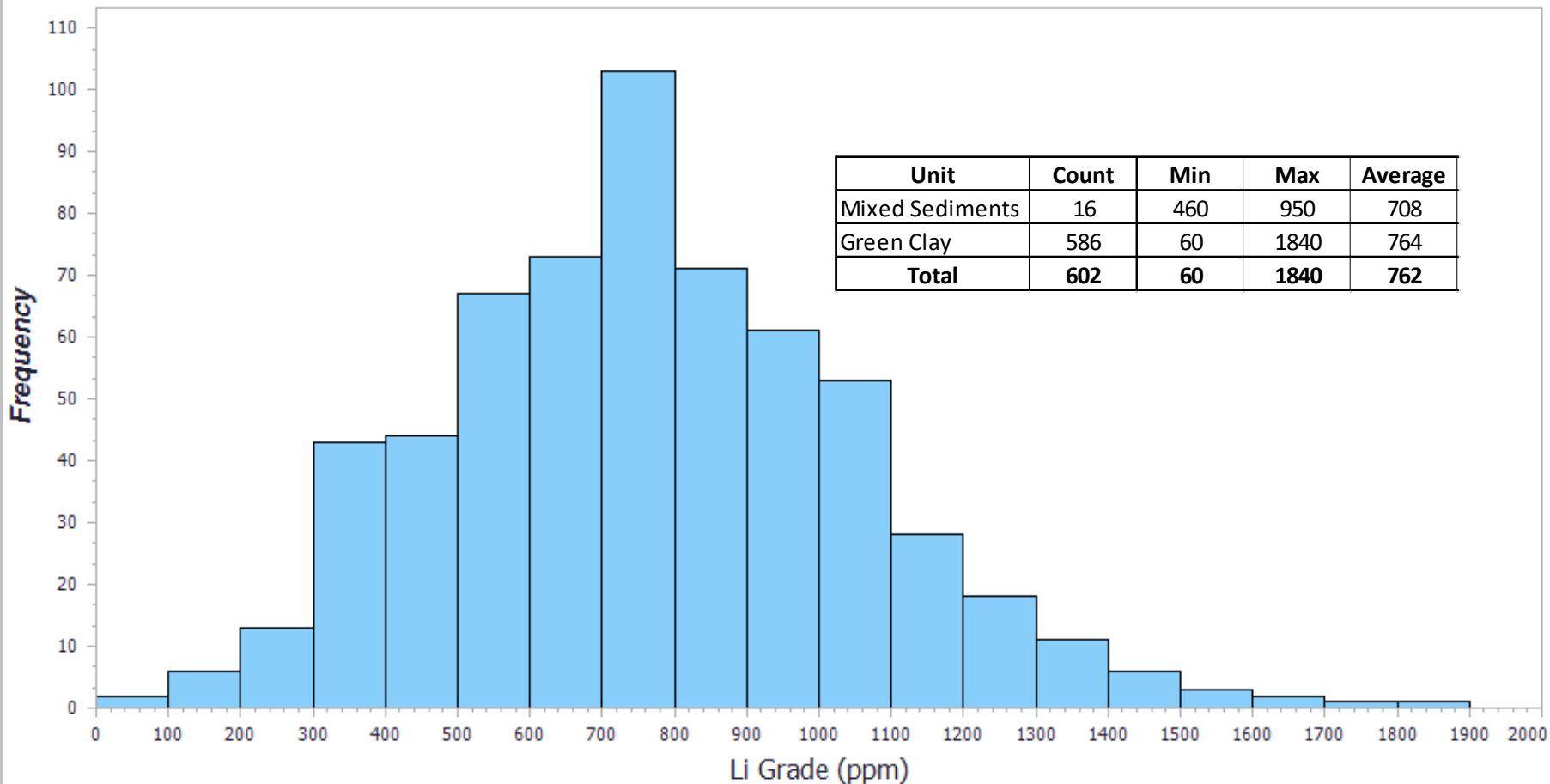
**Model Zones**

**Figure 14-2**

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09



**Histogram - All Resource Sediments**



C:\Data\Spean\Geospatial\ArcGIS\MXD\Fig\_14\_3\_Spear\_Mineralized\_Z\_GradeDistribution.mxd



TECHNICAL REPORT CVLC PROJECT

**Mineralized Zone  
Grade Distribution**

**Figure 14-3**

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

**Table 14.2**  
**Vertical Zone Thickness from Drill Holes**

Zone	Vertical Length (ft)			
	Count	Minimum	Maximum	Average
Weathered (Alluvium)	13	10	100	26
Mixed Sediments	5	30	190	77
Green Claystone <sup>1</sup>	13	102	311	236
Brown Sandstone <sup>1</sup>	11	2	127	24

1 – includes only partial penetrations due to drill holes terminating in zone

#### 14.4.6 Lithium Mineralization Statistics

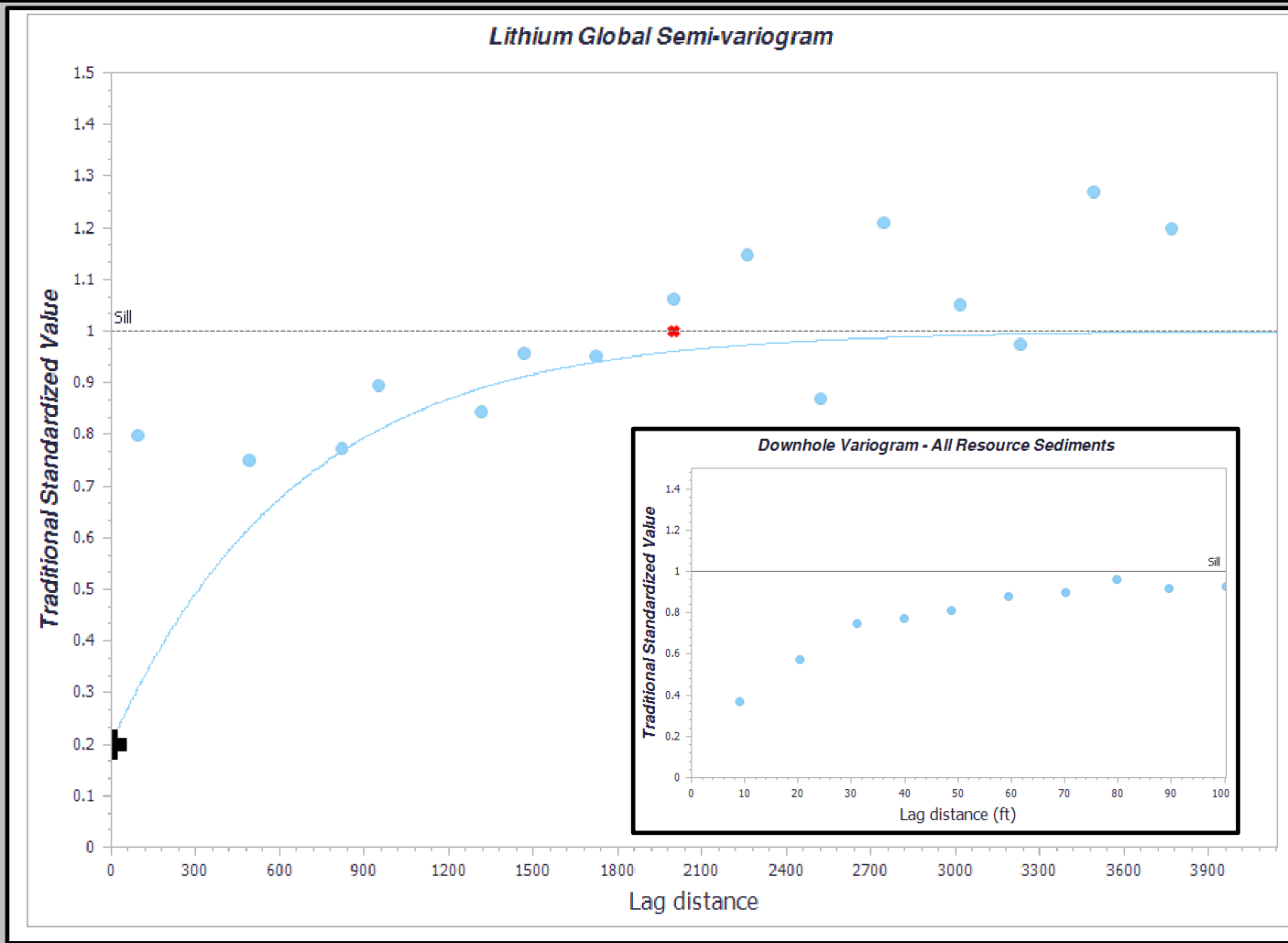
The frequency distribution chart (histogram) that is shown on Figure 14-3 shows a normal distribution of lithium grades for samples taken within the lithium mineralized zones that comprises mixed sediments and green claystone. The number and statistics for the minerals zone samples used to generate the histogram are also shown in Figure 14-3. Samples were taken at five-foot regular intervals. No outliers in lithium grades were observed and no trimming of grades is deemed necessary for grade estimation

Figure 14-4 shows a global semi-variogram and downhole semi-variogram (insert) generated from 5 ft (1.5 m) composite samples through the mineralized zone. This semi-variogram represents the combined variances from multi-direction semi-variograms. No distinct ordinations in lithium grade trends could be observed in the data as there was insufficient data to generate directional semi-variograms. There is also no distinct stratigraphic trend in lithium mineralization that could be used to further subdivide the mineralized zone. Maximum global range for the lithium grades is interpreted from the semi-variogram to be 610 metres (2,000 ft).

#### 14.4.7 Density

In situ densities data was not available from samples taken from the Project area. Samples taken of lithium mineralized claystone in the adjacent Cyprus Development Corporation (Cyprus) property for their Preliminary Economic Assessment (Lane et al., 2018) and Prefeasibility Study (Lane et al., 2020) showed a range in lithium grades from 1.7 g/cm<sup>3</sup> (2018 study) to 1.5 g/cm<sup>3</sup> (2020 study). A fixed density of 1.7 g/cm<sup>3</sup> was identified as representative of the mineralized zone for the resource estimation given that the primary lithotype is claystone with minor quantities of mixed sediments.





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## Mineralized Zone Semi-Variogram

Figure 14-4

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

**14.4.8 Model Build**

The procedures followed in building the resource model are outlined below:

- Topography was coded as a block percent using a wireframe generated from open-source surface topography.
- A base of surface weathering elevation grid was generated
- A faulted base surface grid was generated from contact between mineralized zone and waste brown sandstone below from cross-sectional interpretation of the exploration data.
- The interval between the base of weathering elevation grid and the base surface grids was coded into the block model as a percentage item and zone item.
- Regular 5 ft (1.5 m) composites from both chip sample and core samples within the mineralized zone were used to estimate numeric codes for mixed sediments and green claystone using an IDW2 algorithm and base grid a relative elevation reference plane.
- The block model mineralized zone was separated into either mixed sediments (Zone=2) or green clay (Zone=3) based in majority code.
- Lithium grades (ppm) were estimated into the block model mineralized zone from regular 5 ft (1.5 m) composites using a zone code match, IDW2 algorithm and base grid a relative elevation reference plane.
- The maximum horizontal range for lithium grade estimates was set at 2,000 ft (610 m) as determined from semi-variogram analyses of the lithium grade data. Vertical range was set at 5,000 ft to capture relative elevation across fault offsets.
- Maximum number of samples for a block lithium grade estimates was set to the nearest nine samples to simulate the tabular lens-like grade trends as observed from drill hole records.
- Mineralized zone blocks within 1,000 ft (305 m) of nearest valid lithium samples were tagged as indicated and 2,000 ft (605 m) measured.
- Model grade estimates were validated against input drill hole grades using cross-sections through the block model.

Model estimation parameters are summarized in Table 14.3.

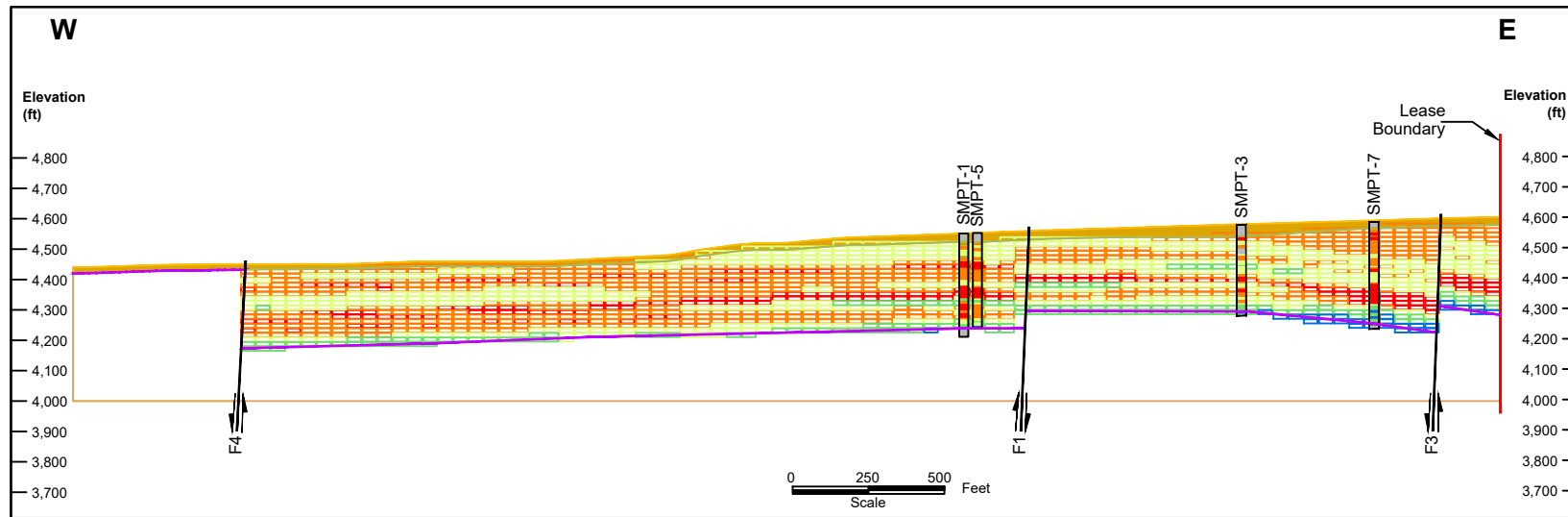
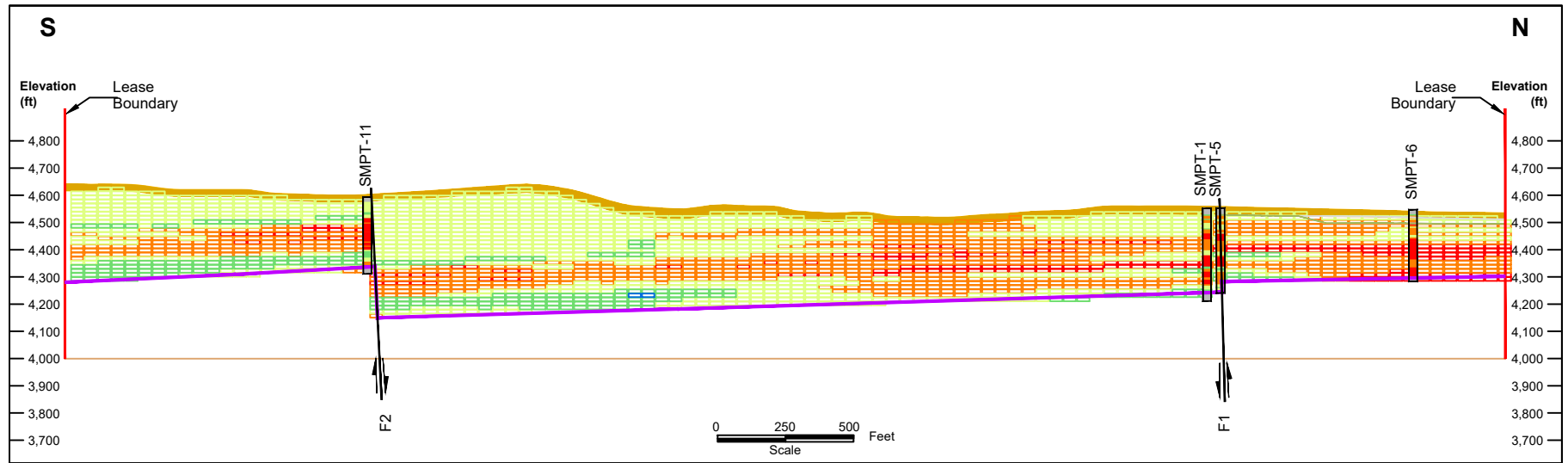
**Table 14.3**  
**Lithium Grade Estimation Parameters**

Maximum Search		No. Composites		
Direction	Range (ft)	Minimum	Maximum	Maximum per hole
East	2,000	3	9	3
North	2,000	3	9	3
Vertical	5,000	3	9	3



Figure 14-5 illustrates the lithium grade distribution along two cross-section lines (W-E and S-N) through the mineralized zone in the resource block model. Superimposed on the cross-section are drill hole lithium grades from five foot (1.5 metres) regular composites through the mineralized zone. There is a close match between block estimates (15-foot blocks) and drill hole grades (five-foot regular composites).





**Legend**

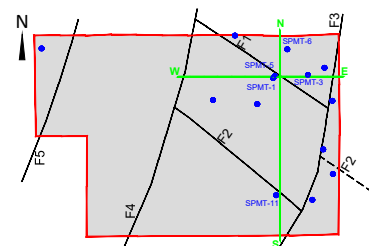
- Surface Weathering
- Base of Mineralized Zone
- Geologic Model Fault Trace
- Drill Hole Location
- Lease Area

**Drill Hole Lithium (ppm)**

- >1000
- 800 - 1000
- 600 - 800
- 400 - 600
- < 400

**Model Lithium (ppm)**

- >1000
- 800 - 1000
- 600 - 800
- 400 - 600
- < 400



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**Resource Model Cross Sections**

Figure 14-5

DRAWN BY: M.B  
 CHKD BY: D.L  
 DATE: 21 06 08

Fig\_7-3\_14-5\_Structural\_and\_Resource Model Sections.dwg  
 V:\1295\active\129500403\Discipline\Geology\Geospatial\CAD

#### 14.5 Assessment of Reasonable Prospects for Economic Extraction

A base case lithium resource cutoff grade has been determined based on the economics of a medium size (100 Mtpa) run-of-mine (ROM) surface mining operation that does not require blasting. Processing of the ore would be onsite extracting lithium from claystone using an acid digestion method.

The following costs, processing costs, and recovery, in metric units and US\$, were used to derive a base case cutoff grade for an eventual lithium carbonate ( $\text{Li}_2\text{CO}_3$ ) product:

- Mining costs US\$2/tonne;
- Processing costs US\$15/tonne; and
- Processing recovery 80%.

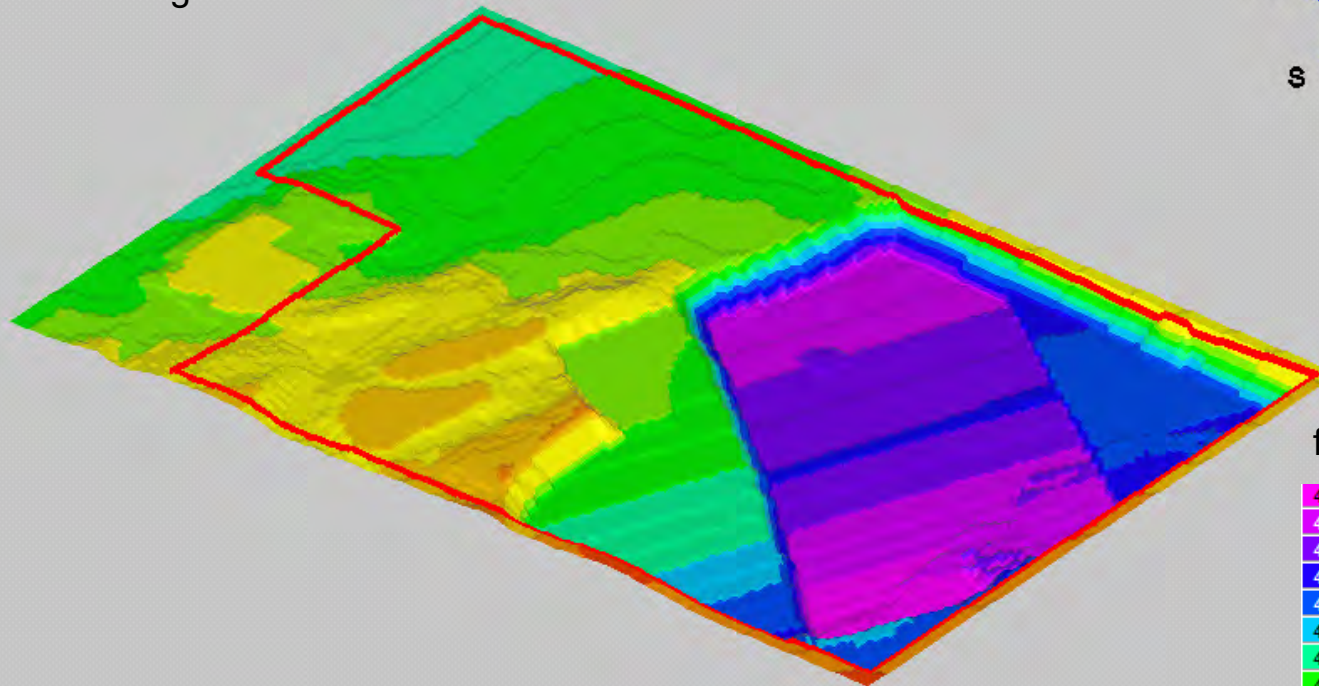
No royalties have been factored in these estimates of costs and taxes are expected to be absorbed in the processing costs at approximately US\$1/tonne. Revenue from a lithium carbonate equivalent product is estimated to be US\$10,000/tonne for the cutoff grade calculation. Using the above inputs and  $\text{Li}_2\text{CO}_3$ :Li ratio of 5.32, a base case cutoff grade for lithium is estimated to be 400 ppm, rounded up from 399 ppm.

The most variable cost impacting the cutoff grade is processing costs, which given the available information, is based on published estimates for a similar deposit types (Lane et al., 2020). Higher processing costs may be realized following metallurgical testing of the mineralized claystone that may increase the cutoff grade to greater than 400 ppm lithium. Similarly, lower prices for lithium carbonate would also increase the cutoff grade, though this is viewed as lower risk in current market conditions.

An economic pit shell at a constant 45 degrees slope was developed using 400 ppm lithium as a cutoff grade to separate resource blocks from waste blocks in the model. A US\$10,000/tonne revenue for an equivalent lithium carbonate product and a mining cost of US\$2/tonne was used in the derivation of the pit shell. Figure 14-6 shows an oblique view of the pit shell looking towards the northwest.



Economic Pit Shell  
Oblique view looking northwest




Surface colored  
in elevation  
feet above sea level



2000 Feet

Legend

 Clayton Valley Lithium Clay (CVLC) Project Area



TECHNICAL REPORT CVLC PROJECT

Economic Pit Shell

Figure 14-6

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

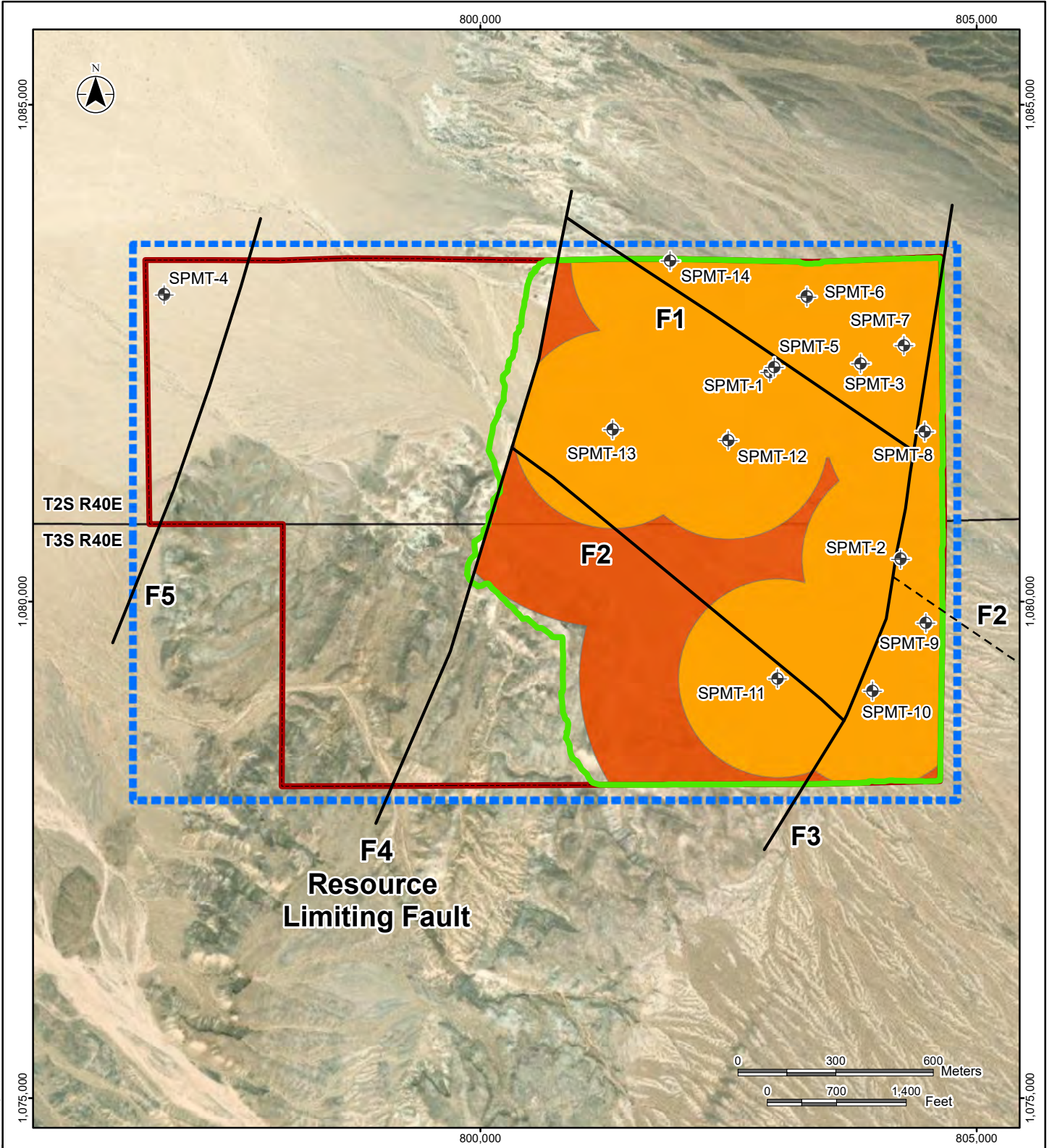


## 14.6 Lithium Resource Estimates

Lithium resources are contained within the predominantly green claystone beds deposited on top of a brown sandstone. This mineralized zone is further constrained by a large displacement normal fault (F4) in the west of the Project area and maximum extent of inferred resources as shown on Figure 14-7 Resource Classification Map. Mineral resources are classified by distance from nearest valid drill hole sample up to maximum distance of 2,000 ft (610 m) for Inferred, and 1,000 ft (305 m) for Indicated. No measured resources have been identified due to the unavailability of density data, overall variability in lithium grades and requirements for more detailed lithological mapping to further refine the waste versus mineralized zones.

The lithium mineral resource estimates are presented in Table 14.6 in U.S. customary units and Table 14.7 in metric units. The resource estimates are contained within an economic pit shell at constant 45° pit slope to a maximum vertical depth of 535 ft (163 m) below surface. The crest of the pit shell is shown on Figure 14-6 and pit shell depth is shown on Figure 14-8. Lithium resources are presented for a range of cutoff grades to a maximum of 800 ppm lithium. The base case lithium resource estimates are highlighted in bold type in Table 14.6 and Table 14.7. All lithium resources on the Project are surface mineable at a stripping ratio of 0.11 waste yd<sup>3</sup>/ton (0.09 m<sup>3</sup>/tonne) at the base case cutoff grade of 400 ppm lithium. The effective date of the lithium resource estimate is June 9, 2021.





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**Legend**

- Drill Hole
- Geologic Model Fault Trace
- Fault Inferred
- Pit Shell Crest
- Model Boundary
- Clayton Valley Lithium Clay (CVLC) Project Area
- Township and Range
- Resource Classification**
- Indicated
- Inferred

**Notes**  
 1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US  
 2. Data Source: Stantec Model; basemap: World Imagery, Esri



TECHNICAL REPORT CVLC PROJECT

**Resource Classification Map**

**Figure 14-7**

DRAWN BY: J.K.  
 CHKD BY: D.L.  
 DATE: 21/06/09

**Table 14.4**  
**Lithium Resource Estimates – U.S. Customary Units**

Cutoff Li (ppm)	Volume (Myd <sup>3</sup> )	Tons (Mst)	Li (ppm)	tons ('000 st)	
				Li	Li <sub>2</sub> CO <sub>3</sub>
<b>Indicated</b>					
<b>400</b>	<b>151</b>	<b>216</b>	<b>781</b>	<b>169</b>	<b>898</b>
600	123	176	843	148	789
800	67	96	951	91	486
<b>Inferred</b>					
<b>400</b>	<b>34</b>	<b>49</b>	<b>808</b>	<b>40</b>	<b>210</b>
600	31	44	841	37	197
800	17	24	952	23	120

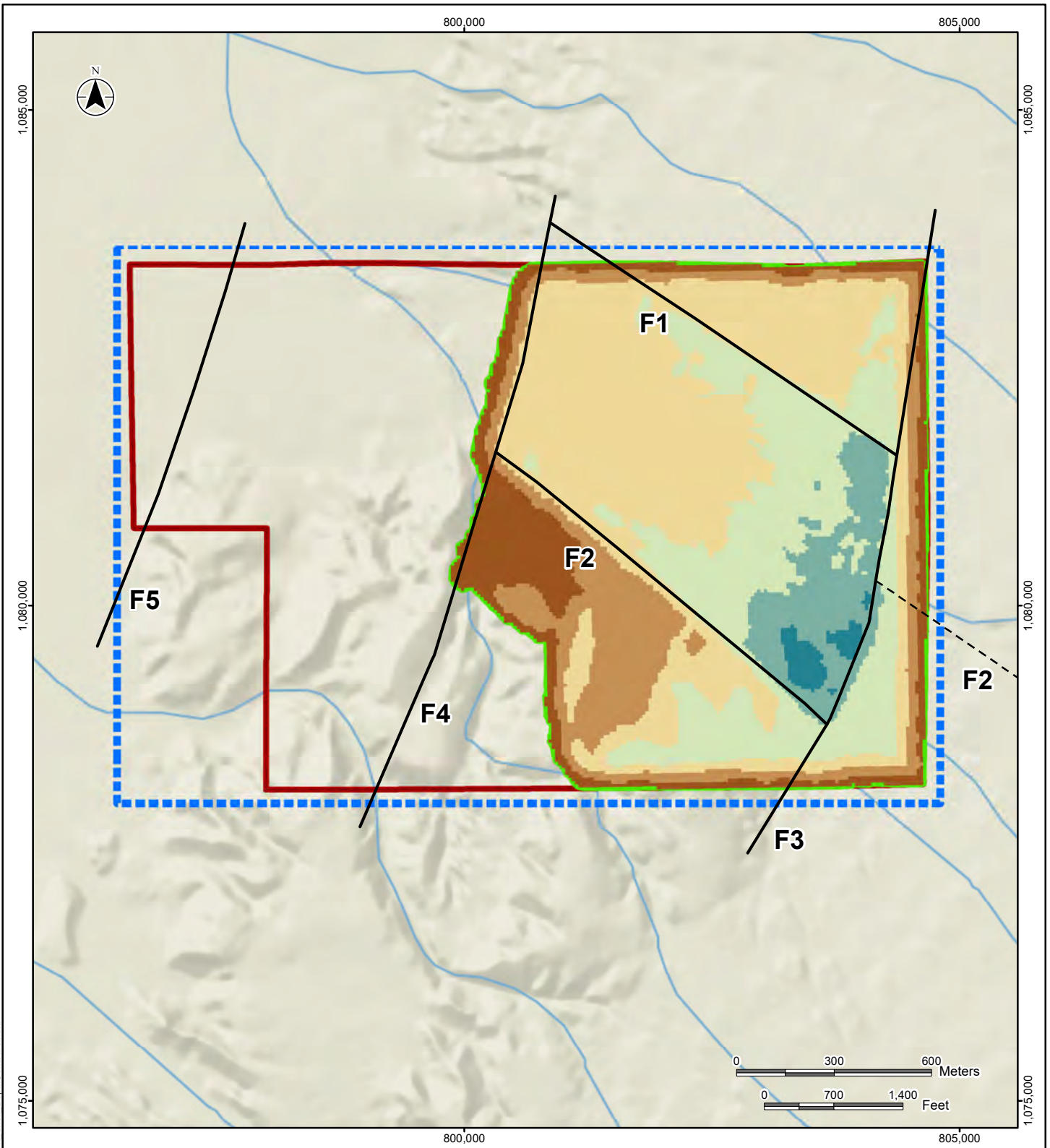
- CIM definitions are followed for classification of Mineral Resource.
- Mineral Resource surface pit extent has been estimated using a lithium carbonate price of US\$10,000 US\$/tonne and mining cost of US\$2.00 per tonne, a lithium recovery of 80%, fixed density of 1.70 g/cm<sup>3</sup> (1.43 tons/yd<sup>3</sup>).
- Conversions: 1 metric tonne = 1.102 short tons, metric m<sup>3</sup> = 1.308 yd<sup>3</sup>, Li<sub>2</sub>CO<sub>3</sub>:Li ratio = 5.32.
- Totals may not represent the sum of the parts due to rounding.
- The Mineral Resource estimate has been prepared by Derek Loveday, P. Geo. of Stantec Consulting Services Ltd. in conformity with CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines and are reported in accordance with the Canadian Securities Administrators NI 43-101. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that any mineral resource will be converted into mineral reserve.

**Table 14.5**  
**Lithium Resource Estimates – Metric Units**

Cutoff Li (ppm)	Volume (Mm <sup>3</sup> )	Tonnes (Mt)	Li (ppm)	Tonnes ('000 t)	
				Li	Li <sub>2</sub> CO <sub>3</sub>
<b>Indicated</b>					
<b>400</b>	<b>115</b>	<b>196</b>	<b>781</b>	<b>153</b>	<b>815</b>
600	94	159	843	134	715
800	51	87	951	83	441
<b>Inferred</b>					
<b>400</b>	<b>26</b>	<b>44</b>	<b>808</b>	<b>36</b>	<b>191</b>
600	23	40	841	34	179
800	13	21	952	20	109

- CIM definitions are followed for classification of Mineral Resource.
- Mineral Resource surface pit extent has been estimated using a lithium carbonate price of US\$10,000 US\$/tonne and mining cost of US\$2.00 per tonne, a lithium recovery of 80%, fixed density of 1.70 g/cm<sup>3</sup> (1.43 tons/yd<sup>3</sup>).
- Conversions: 1 metric tonne = 1.102 short tons, metric m<sup>3</sup> = 1.308 yd<sup>3</sup>, Li<sub>2</sub>CO<sub>3</sub>:Li ratio = 5.32.
- Totals may not represent the sum of the parts due to rounding.
- The Mineral Resource estimate has been prepared by Derek Loveday, P. Geo. of Stantec Consulting Services Ltd. in conformity with CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines and are reported in accordance with the Canadian Securities Administrators NI 43-101. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that any mineral resource will be converted into mineral reserve.





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**Legend**

- Geologic Model Fault Trace
- Fault Inferred
- Pit Shell Crest
- Model Boundary
- Clayton Valley Lithium Clay (CVLC) Project Area

**Pit Shell Depth (feet)**

- < 100
- 100 - 200
- 200 - 300
- 300 - 400
- 400 - 500
- > 500

**Notes**

1. Coordinate System: NAD 1927 StatePlane Nevada West FIPS 2703; Units: Foot US
2. Data Source: Stantec Model; basemap: National Geographic World Map, Esri



TECHNICAL REPORT CVLC PROJECT

**Economic Pit Shell Depth Map**

**Figure 14-8**

DRAWN BY: J.K.  
CHKD BY: D.L.  
DATE: 21/06/09

## 14.7 Potential Risks

The accuracy of resource estimates is, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgment. Given the data available at the time; the estimates presented herein are considered reasonable. However, they should be accepted with the understanding that additional data and analysis available after the date of the estimates may necessitate revision. These revisions may be material.

Mineral resources are not mineral reserves and there is no assurance that any mineral resources will ultimately be reclassified as Proven or Probable reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability.

Potential risks that may impact accuracy of the mineral resource estimates are:

- The resource limiting F4 Range Front fault in the west of the Property may shift location given further exploration. Should new supporting data support a significant shift in the F4 fault location this may have a material impact on the resource estimates.
- In situ density of the mineralized claystone is estimated based on results from adjacent properties and as such density would need to be acquired from within the Project area to increase resource confidence.
- Additional metallurgical testing of the mineralized claystone may indicate that input costs for the practical extraction of lithium to be higher than anticipated. Since processing costs are a significant component of lithium carbonate (or lithium hydroxide monohydrate) production, the lithium cutoff grade may be higher than the base case cutoff grade of 400 ppm used for the lithium resource estimates.



## 15 MINERAL RESERVE ESTIMATES

This Technical Report does not include an estimate of reserves.



## 16 MINING METHODS

There is no information for this section of the Technical Report as the Property is not presently producing and is not yet under development.



## 17 RECOVERY METHODS

There is no information for this section of the Technical Report as the Property is not presently producing and is not yet under development.





## 18 PROJECT INFRASTRUCTURE

There is no information for this section of the Technical Report as the Property and is not yet under development.



## 19 MARKETS AND CONTRACTS

There is no information for this section of the Technical Report as the Property is not presently producing and is not yet under development.



## **20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

There is no information for this section of the Technical Report as the Property is not presently producing and is not yet under development.



## 21 CAPITAL AND OPERATING COSTS

There is no information for this section of the Technical Report as the Property is not presently producing and is not yet under development.



## 22 ECONOMIC ANALYSIS

There is no information for this section of the Technical Report as the Property is not presently producing and is not yet under development.



## 23 ADJACENT PROPERTIES

The McGee Lithium Claims are surrounded by active lode and placer claims held by other companies and individuals. These claims are listed in Table 23.1.

**Table 23.1**  
**Adjacent Properties**

Claim Serial Numbers	Claim Names	Claim Type	Claimant Name(s)	Meridian	Township	Range	Section	Subdivision
NMC1119071-89	Glory 29-32 & 38-40; Angel 4-11	Placer	Robert D Marvin & Joy K Marvin	21	002 S	040 E	33	NW/NE
NMC136427-34, 38-39, 55-62	JLS 14-21, 25-26, 42-49	Lode	Robert D Marvin	21	002 S	040 E	33	NW/NE
NMC1125229-44	CVE 119-126 & CVE 143-150	Placer	Sovereign Gold Nevada Inc	21	002 S	040 E	33	SW/SE
NMC1200661, 63, 65, 67, 69, 71, 73, 75, 77, 79	AUL 146, 148, 150, 154, 156, 158, 160, 162, 164	Lode	Authium LLC	21	002 S	040 E	33	SW/SE
NMC1197505-506	AUT 135-136	Placer	Authium LLC	21	003 S	040 E	3	NW
NMC1179614-19	GLX 39-44	Lode	Cypress Holdings (VN) Inc.	21	002 S	040 E	34	SW/SE



## 24 OTHER RELEVANT DATA AND INFORMATION

All relevant information is included in this report.



## 25 INTERPRETATION AND CONCLUSIONS

The Project is located 55 kilometres west of the town of Tonopah. The Project is accessed off paved State Highway 265, which terminates at the Silver Peak Mine, and then by well-maintained county gravel roads. The Project consists of 26 contiguous unpatented placer claims that span from McGee 30 to McGee 55 and cover 890 acres (~360 hectares).

Drilling on the east half of the Project by Spearmint has discovered a continuous, well mineralized section up to 300 feet thick. The interpreted subsurface distribution of the mineralized claystone includes mixed sediments (tuffaceous mudstone, unit 2) and green clay (unit 3 plus 4). The mixed sediments gradationally overly the green clays and are positively weathering relative to the green clay below. The majority (greater than 80%) of the mineralized claystone comprise the green clay unit.

The geologic model from which lithium resources are reported is a 3D block model. The resource estimates are contained within an economic pit shell at constant 45° pit slope to a maximum vertical depth of 535 ft (163 m) below surface using a base case cutoff grade 400 ppm lithium to produce an eventual battery grade lithium carbonate product.

The following costs, recoveries and revenue, in metric units and US\$, were used to derive a base case cutoff grade for an eventual lithium carbonate ( $\text{Li}_2\text{CO}_3$ ) product:

- Mining costs US\$2/tonne;
- Processing costs US\$15/tonne;
- Processing recovery 80%; and
- US\$10,000/tonne revenue for  $\text{Li}_2\text{CO}_3$  product.

The lithium mineral resource estimates are presented in Table 25.1 in U.S. customary units and Table 25.2 in metric units. Lithium resources are presented for a range of cutoff grades to a maximum of 800 ppm lithium. The base case lithium resource estimates are highlighted in bold type in Table 25.1 and Table 25.2. All lithium resources on the Project are surface mineable at a stripping ratio of 0.11 waste  $\text{yd}^3/\text{ton}$  ( $0.09 \text{ m}^3/\text{tonne}$ ) at the base case cutoff grade of 400 ppm lithium. The effective date of the lithium resource estimate is June 9, 2021.





**Table 25.1**  
**Lithium Resource Estimates – U.S. Customary Units**

Cutoff Li (ppm)	Volume (Myd <sup>3</sup> )	Tons (Mst)	Li (ppm)	tons ('000 st)	
				Li	Li <sub>2</sub> CO <sub>3</sub>
<b>Indicated</b>					
<b>400</b>	<b>151</b>	<b>216</b>	<b>781</b>	<b>169</b>	<b>898</b>
600	123	176	843	148	789
800	67	96	951	91	486
<b>Inferred</b>					
<b>400</b>	<b>34</b>	<b>49</b>	<b>808</b>	<b>40</b>	<b>210</b>
600	31	44	841	37	197
800	17	24	952	23	120

- CIM definitions are followed for classification of Mineral Resource.
- Mineral Resource surface pit extent has been estimated using a lithium carbonate price of US\$10,000/tonne and mining cost of US\$2.00 per tonne, a lithium recovery of 80%, fixed density of 1.70 g/cm<sup>3</sup> (1.43 tons/yd<sup>3</sup>).
- Conversions: 1 metric tonne = 1.102 short tons, metric m<sup>3</sup> = 1.308 yd<sup>3</sup>, Li<sub>2</sub>CO<sub>3</sub>:Li ratio = 5.32.
- Totals may not represent the sum of the parts due to rounding.
- The Mineral Resource estimate has been prepared by Derek Loveday, P. Geo. of Stantec Consulting Services Ltd. in conformity with CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines and are reported in accordance with the Canadian Securities Administrators NI 43-101. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that any mineral resource will be converted into mineral reserve.

**Table 25.2**  
**Lithium Resource Estimates – Metric Units**

Cutoff Li (ppm)	Volume (Mm <sup>3</sup> )	Tonnes (Mt)	Li (ppm)	Tonnes ('000 t)	
				Li	Li <sub>2</sub> CO <sub>3</sub>
<b>Indicated</b>					
<b>400</b>	<b>115</b>	<b>196</b>	<b>781</b>	<b>153</b>	<b>815</b>
600	94	159	843	134	715
800	51	87	951	83	441
<b>Inferred</b>					
<b>400</b>	<b>26</b>	<b>44</b>	<b>808</b>	<b>36</b>	<b>191</b>
600	23	40	841	34	179
800	13	21	952	20	109

- CIM definitions are followed for classification of Mineral Resource.
- Mineral Resource surface pit extent has been estimated using a lithium carbonate price of US\$10,000/tonne and mining cost of US\$2.00 per tonne, a lithium recovery of 80%, fixed density of 1.70 g/cm<sup>3</sup> (1.43 tons/yd<sup>3</sup>).
- Conversions: 1 metric tonne = 1.102 short tons, metric m<sup>3</sup> = 1.308 yd<sup>3</sup>, Li<sub>2</sub>CO<sub>3</sub>:Li ratio = 5.32.
- Totals may not represent the sum of the parts due to rounding.
- The Mineral Resource estimate has been prepared by Derek Loveday, P. Geo. of Stantec Consulting Services Ltd. in conformity with CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines and are reported in accordance with the Canadian Securities Administrators NI 43-101. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that any mineral resource will be converted into mineral reserve.



## 26 RECOMMENDATIONS

The recommendations are presented as Phase 1 and Phase 2 work programs. Advancing to a Phase 2 work program is contingent on obtaining positive results from the Phase 1 work program. The Phase 1 and Phase 2 work programs are presented below.

### Phase 1 Work Program

The following additional exploration and testing is recommended:

- Fence line drilling across the resource limiting F4 fault to better define the extent of the resource in the west of the property.
- A LiDAR surface topography survey covering the extent of the Project area to aid in the identification of faults through observation of subtle surface disturbances in the data and to identify areas of potential deep surface weathering.
- Advance the 2017 surface mapping and sampling along the hill slopes on the western side of the Project area where there is greater potential for surface exposure of unweathered lithium-bearing claystone.

Sampling of all lithologic units addressed in Section 7 for bulk density testing and for multi-element analysis for waste and mineralized zone characterization.

The estimated costs with the Phase 1 work program are outlined in Table 26.1.

**Table 26.1**  
**Phase 1 Work Program Cost Estimate**

<b>Program</b>	<b>Purpose</b>	<b>Method</b>	<b>Total (US\$000)</b>
Fence Line Drilling	Defining resource extent in western portion of the Project area	Core drilling for five holes at 100 \$/ft including assay and labor, total program is 2,500 ft	250
LiDAR Survey	Potential identification of subtle changes in subsurface geology	Drone LiDAR Survey	15
Surface mapping and sampling	Advancing geological interpretation and increasing resource confidence	Field mapping	20
Additional core sampling	Obtain bulk density and additional multi-element analyses from available samples in storage	Laboratory analysis	15
<b>Estimated Total</b>			<b>300</b>



**Phase 2 Work Program**

Stantec recommends that the next phase is to conduct a Preliminary Economic Assessment (PEA) on the Property. The PEA involves several major tasks, which are listed below:

- Identify ground water sources to be utilized in the development of the Project;
- Mine design and development;
- Lithium process facilities including a sulphuric acid plant;
- Project infrastructure and required utilities;
- Tailings management plan;
- Regulatory roadmap outlining the regulatory process, timelines and costs; and
- Capex and Opex estimate and economic analysis.

The cost to complete the Phase 2 work program is estimated at US\$425k.



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