INFERRED RESOURCE ESTIMATE FOR LITHIUM

CLAYTON VALLEY SOUTH PROJECT
CLAYTON VALLEY
ESMERALDA COUNTY
NEVADA, USA

TECHNICAL REPORT FOR NI 43-101
PREPARED ON BEHALF OF PURE ENERGY MINERALS LTD.

PREPARED BY:
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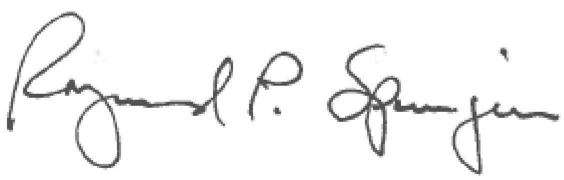
JULY 17 2015

DATE AND SIGNATURE PAGE

This Report entitled "Inferred Resource Estimate for Lithium, Clayton Valley South Project, Clayton Valley, Esmeralda County, Nevada, USA", for Pure Energy Minerals, Ltd., is dated July 17th, 2015.



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"Original Document signed and sealed by Raymond P. Spanjers, MS, PG"

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1 SUMMARY

Pure Energy Minerals Ltd. is a publicly traded lithium exploration company listed on the TSX Venture Exchange (TSX:PE) with a total lease area of 3,240 ha (8,004 acres) of public land in southern Clayton Valley, Nevada, USA. Of this total area, structured lease agreements with third parties account for 2,850 hectares (7,043 acres). The leases are adjacent to Albemarle's Silver Peak Operations where lithium brines are processed in evaporation ponds and used to produce a variety of lithium chemicals. The operation is unique to North America and has been in operation since 1967. Highways and electric power are in place, and local and regional resources are easily accessible.

Clayton Valley is located within the Basin and Range Province in southern Nevada and is an internally drained, fault bounded and closed basin. Basin-filling, asymmetrically thicker to the east, strata compose the aquifer system which hosts and produces the lithium-rich brine. Multiple wetting and drying periods during the Pleistocene resulted in the formation of lacustrine deposits, salt beds, and lithium-rich brines in the Clayton Valley basin. Six main aquifers have been identified in the entire basin, and two of these have been drilled by Pure Energy.

Rodinia Minerals, Inc., a previous holder of the claims, completed a geophysical survey surrounding the existing lithium operation and identified a deep northeast-southwest structural trough in southern Clayton Valley. Rodinia drilled 2 dual wall reverse circulation boreholes in the north section of its claims (now Pure Energy claims) in 2009/10 and identified aquifers that contained lithium up to 400 ppm Li to 488 m (1600 ft) in depth. Rodinia dropped the claims in order to concentrate financial resources on other projects in South America.

Pure Energy completed detailed gravity and seismic reflection surveys during 2014-15 that confirmed the deep structural trough on its claims and identified 19 reflectors from sediment layers that correspond to previously identified Li-aquifer horizons. Two exploratory boreholes were completed in the north end of the claims. CV-1 "twinned" the Rodina hole SPD-9, and CV-2 explored new ground further south. Pumping tests completed for 8 hrs. in CV-1 provided positive results of 150 gpm (9.5 L/s) and 225 ppm Li.

An **Inferred Resource of 816,000 metric tonnes of Lithium Carbonate Equivalent (LCE)** has been calculated based on borehole sample chemistry, seismic and gravity interpretations of basin stratigraphy. Additional exploration activities are recommended with an estimated cost of US$3.47 million.

2 INTRODUCTION

2.1 Introduction and Purpose of Report

Pure Energy Minerals, Ltd. ("PE") is a public lithium exploration company with corporate and exploration offices located in Vancouver, BC. PE is listed on the TSX Venture Exchange (TSXV:PE). Pure Energy Minerals Ltd entered into lease agreements with GeoXplor Corp and Nevada Alaska Mining Company on 2,850 hectares (7,043 acres) in Clayton Valley, NV under which a 100% interest in the claims could be earned. The GeoXplor terms of the lease agreement (made effective on April 30, 2014, and modified on December 3, 2014) include cash payments, common shares, minimum work requirements and royalties on production. The Nevada Alaska Mining lease terms (binding Letter of Content dated April 10, 2015) include cash payments, common shares and net smelter royalties. An additional 390 hectares (963 acres) of claims are held directly by Pure Energy Minerals, through its wholly-owned US subsidiary, Esmeralda Minerals LLC. Details are provided in Section 4.2.2 of this report.

Raymond P. Spanjers, P.G., was retained by Pure Energy to prepare a technical report on the inferred resource on the Clayton Valley leases in conformity to National Instrument 43-101 (NI 43-101) standards. This report has been prepared and is to be used by Pure Energy for the purpose of supporting the TSX Venture Exchange regulatory requirements and/or financing.

2.2 Terms of Reference

This report has been prepared in accordance with the formatting requirements of NI 43-101. It is intended to be used as a comprehensive review of recent exploration activities on the property, provides documentation for written disclosures and should be read in its entirety. The author visited the site on April 2, 2015, and obtained data from laboratories and other technical experts for this report via Dr Andy Robinson, COO of Pure Energy. Raymond P. Spanjers is responsible for this entire report.

2.3 Source of Information

The report is based upon information and data collected by Pure Energy, and data collected, compiled and validated by the author. Mineral rights and land ownership were provided by Pure Energy. The majority of the information contained within the report was derived from the following:

- Pure Energy-supplied exploration maps, logs, laboratory analyses, third-party reports and field test data.
- Published literature.
- Personal knowledge and discussions with other persons.

Sources of information are listed in Section 27 and are acknowledged where referenced in the report text, as are personal discussions.

2.4 Units and List of Abbreviations

All units of measurement in this report are metric unless otherwise stated. All costs are expressed in US dollars ($US). Exploration survey data are reported in Universal Transverse Mercator (UTM) coordinates, North American Datum (NAD 27).

The following abbreviations are used in this report:

Abbreviation	Term	Abbreviation	Term
µg/L	Micrograms per liter	mASL	meters above sea level
$^{87}Sr/^{86}Sr$	Strontium Isotope 87/86 Ratio	Mg	Magnesium
ASL	above sea level	mg/L	milligrams per liter
B	Boron	mi	mile
bgl	below ground level	mi^2	square mile
BLM	Bureau of Land Management	MM	Million
Ca	Calcium	MS	Masters Degree
CDN$	dollar (Canadian)	Mt	Million tons
Cl	Chloride	MW	megawatt
cm	centimeter	Na	Sodium
COO	Chief Operating Officer	NAD	North American Datum
DWRC	Dual Wall Reverse Circulation	NI 43-101	National Instrument 43-101
Elev	Elevation	P. Eng.	Professional Engineer
ft	feet	pers. comm.	personal communication
gm	gram	PG	Professional Geologist
GPS	Global Positioning System	pH	Measure of Acidity/Basicity
ha	Hectare	ppm	parts per million
ICPMS	Inductively Coupled Plasma Mass Spectrometry	QP	Qualified Person
ICP-OES	ICP-Optical Emission Spectroscopy	RLS	Registered Land Surveyor
I.D.	Inside Diameter	S	Sulfur
K	Potassium	Si	Silicon
ka	Thousand years before present	SME	Society of Mining, Metallurgy and Exploration
kg	kilogram	SO_4	Sulphate
km	kilometer	t	metric tonne
km^2	square kilometer	TSX	Toronto Stock Exchange
kV	kilovolts	US$	dollar (US)
Li	Lithium	UTM	Universal Transverse Mercator
L/sec	Liters per second	^oC	Degrees Celsius
Li_2CO_3	Lithium Carbonate	^oF	Degrees Fahrenheit
mm	millimeter	$\delta^{18}O$	Oxygen Isotope 18
m	meter	δ^7Li	Lithium Isotope 7
Ma	Million years before present	δD	Deuterium Isotope

2.5 Qualifications of Consultant

Raymond P. Spanjers is an independent geological consultant, a Registered Professional Geologist (SME No. 3041730) and holds a M.S. Degree in Geology. The author has 35 years of experience in his field, which includes 15 years in lithium pegmatite and brine exploration and development in the US and South America. The author is independent of the property and the vendor, and is a Qualified Person according to NI 43-101.

During the site visit on April 2, 2015, the author inspected drill sites CV-1 and CV-2, reviewed drill logs and borehole samples and other aspects of the Pure Energy claims. The author has explicit knowledge of the claims and previous exploration as Manager of Exploration for Rodinia Lithium.

3 RELIANCE ON OTHER EXPERTS

No other experts were relied upon to produce this report. Dr LeeAnn Munk, an independent consultant and Professor of Geological Sciences at the University of Alaska at Anchorage (who is also a technical advisor to Pure Energy Minerals Ltd.) was consulted to provide limited non-confidential additional information relating to the adjacent Silver Peak operations (to which she had previously provided consulting services), and also for additional background to her published academic studies of the Clayton Valley area (see References section). All other work is the responsibility of the Author.

4 PROPERTY DESCRIPTION AND LOCATION

The Clayton Valley South Property is located in central Esmeralda County, Nevada (Figure 1) approximately halfway between Las Vegas and Reno.

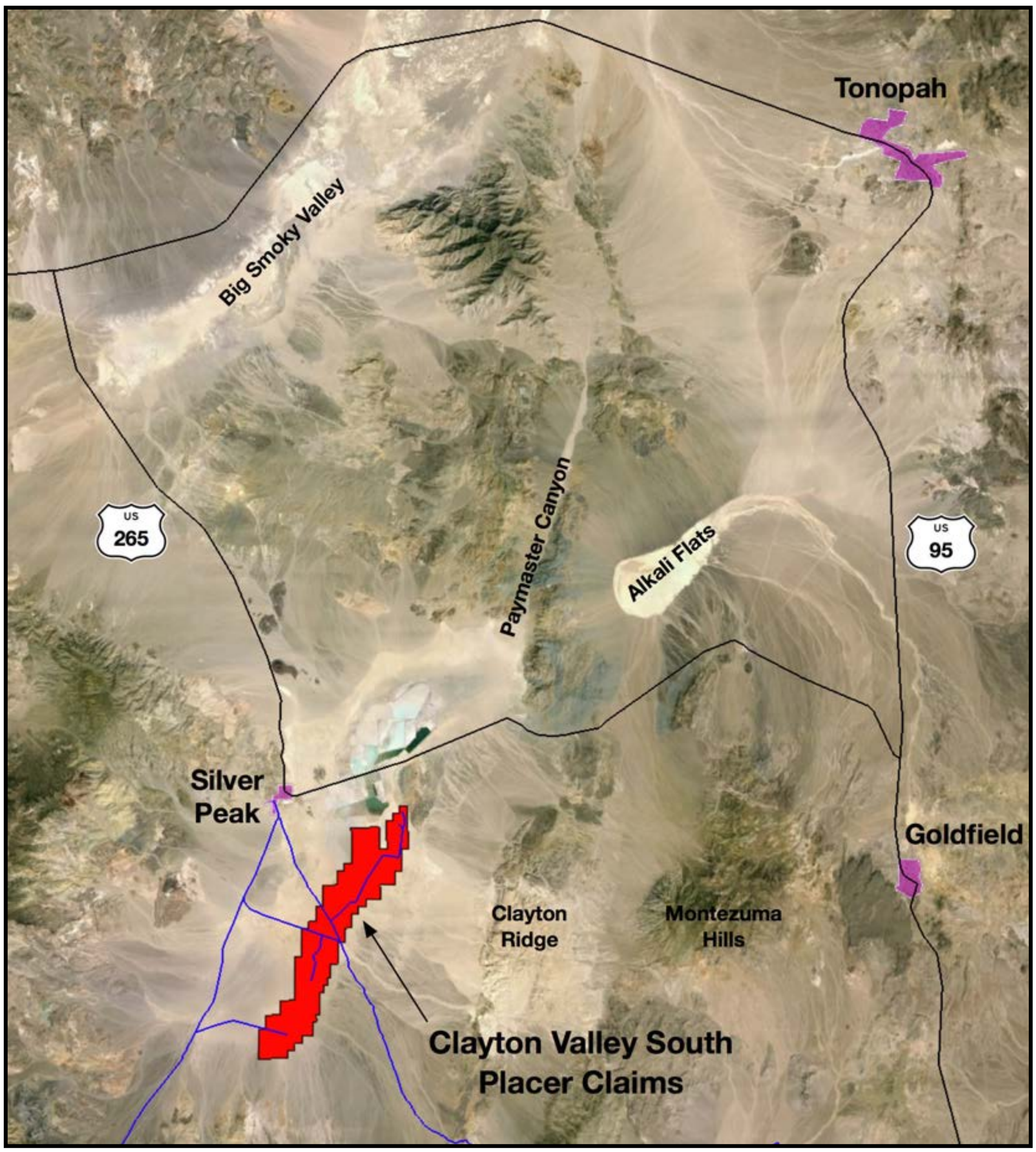
Figure 1: Project location

4.1 Property Location

The Property is located in the southern half of Clayton Valley, in a broad, flat basin (see Figure 2). The nearest settlement is the town of Silver Peak, which lies approximately 5 km (3 mi) to the NW. Access to Silver Peak is from Highway 265, which is a regional road that links Silver Peak to Highway 95. Highway 95 is the main road that links Las Vegas to Reno, and the site is equidistant to both main cities (approximately 270 km/170 mi from each main city). Silver Peak is approximately 61 km (38 mi) from Tonopah, which is the regional commercial centre, and approximately 45 km (28 mi from Goldfield, which is the County Seat of Esmeralda County. Access to and across the site from Silver Peak is via a series of gravel/dirt roads.

The geographic coordinates at the approximate centre of the property are 37° 41’ 00” N by 117° 36’ 30” W.

Figure 2: Project area

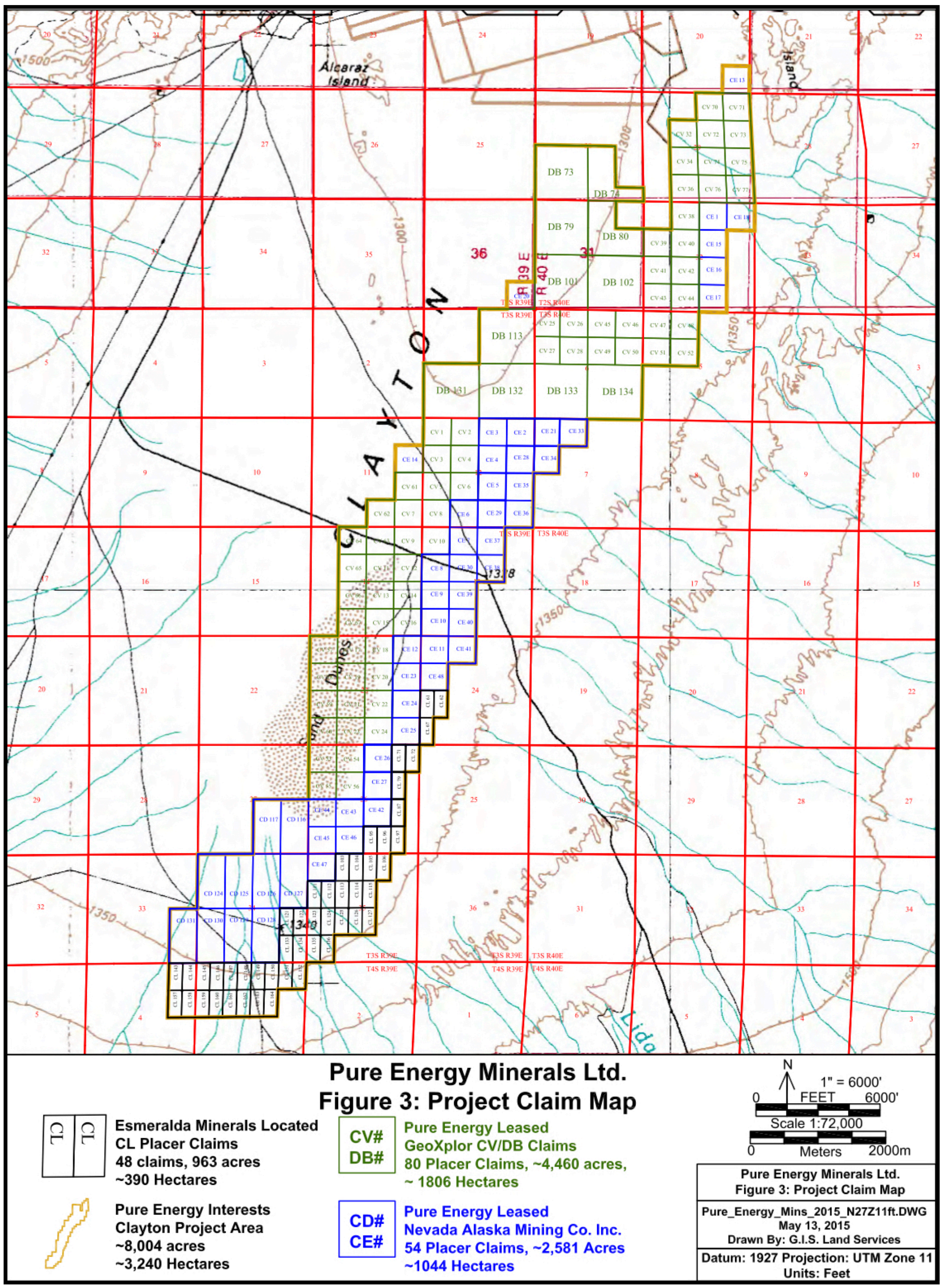


Note: Approximately 62 km from N – S across image; top of image is North.

4.2 Property description

The property consists of a series of lithium placer claims located in the southern half of Clayton Valley. The placer claims are comprised of three main contiguous blocks, and in their entirety, occupy approximately 32.4 km^2 (3,240 ha or 8,004 ac) in a NE-SW trending claim block. All 182 claims are located on unencumbered public land managed by the federal Bureau of Land Management (BLM), and shown in Figure 3.

Figure 3: Project Claim Map



The three blocks of claims (outlined in black, green and blue on Figure 3) each have different provenance and commercial terms associated with them, and are described in turn below.

4.2.1 GeoXplor CV/DB Claims

The GeoXplor claims (outlined in green on Figure 3) consist of 80 contiguous association placer claims covering approximately 1,806 ha (4,460 ac) in the northern part of Pure Energy's claim area. A list of the unpatented association placer claims is provided in Table 1 below.

Table 1: List of GeoXplor Claims

Claim Name	Number	BLM NMC Number	Esmeralda County Doc #	Esmeralda County Page #	Approximate Claim Area (acres)
CV	1-28	1093720-1093743 and 1093748-1093751	189908- 189970	Book 322; pp 208-231 and 264-267	28 claims each approx. 40 acres
CV	32	1093699	189940	Book 322; p239	1 claim approx. 40 acres
CV	34	1093701	189942	Book 322; p241	1 claim approx. 40 acres
CV	36	1093703	189944	Book 322; p243	1 claim approx. 40 acres
CV	38-67	1093705-1093719; 1093755-1093758; 1093744-1093747; and 1095807-1095813	189946-189964; 189932-189935; and 190462-190468	Book 322; pp245-263; pp232-235 Book 323; pp363-369	30 claims approx. 40 acres each
CV	70-77	1102435-1102442	191607-191614	Book 326	8 claims approx. 40 acres each
DB	73-74	1004821-1004822	172580-172581	Book 272; p232	2 claims approx. 160 acres each*
DB	79-80	1004827-1004828	172586-172587	Book 272; pp244-246	2 claims approx. 160 acres each*
DB	101-102	1004849-1004850	172608-172609	Book 272; pp288-290	2 claims approx. 160 acres each
DB	113	1004860	172620	Book 272; p312	1 claim approx. 160 acres
DB	131-134	1004897-1004882	172639-172641	Book 272; pp348-354	4 claims approx. 160 acres each

Note: * part of claim DB-74 and DB-80 overlies Albemarle patented ground and is not senior for Li-extraction

The GeoXplor claims were first staked and claimed several years ago, and have been held previously by other junior development companies as part of option/lease agreements. The current lease agreement between Pure Energy Minerals Ltd and GeoXplor Corp was made effective on April 30, 2014 (the effective date), and modified on December 3, 2014. The lease agreement between the two parties sets out how Pure Energy Minerals Ltd may earn a 100% interest in the claims and has the following general terms:

- Cash payments to be made to GeoXplor of;
    - US$100,000 on effective date;
    - US$250,000 on or before the first, second, third and fourth anniversaries of effective date;
- Common shares of Pure Energy Minerals Ltd to be transferred to GeoXplor as per;
    - 1,000,000 common shares on the effective date;
    - 176,912 common shares on or before the first, second, third and fourth anniversaries of effective date;
- Minimum work commitments to be completed by Pure Energy Minerals on the GeoXplor claims as per;
    - US$750,000 within first anniversary of effective date;
    - Additional US$1,000,000 within second anniversary of effective date;
    - Additional US$2,000,000 within third anniversary of effective date;
- A pre-feasibility study (as per NI 43-101 definition) of the GeoXplor claim area must be completed by fourth anniversary of effective date or, the claim area must be in production;
- Should Pure Energy Minerals, any assignee or third party joint venture complete a positive feasibility study (as per NI 43-101 definition) of the GeoXplor claim area, or a permit to commence commercial production is issued by the BLM, then Pure Energy Minerals will pay GeoXplor an additional US$2,000,000 in cash or common shares;
- Upon Pure Energy Minerals acquiring a 100% interest in the claims (by exercising the conditions above), GeoXplor will be entitled to a royalty equal to 5% gross of revenues derived from sale of lithium concentrates;
- Pure Energy Minerals may reduce the royalty by 50% (to 2.5% gross of revenues from sale of lithium concentrates) by the one-time payment of US$7,000,000;
- Pure Energy Minerals shall pay to GeoXplor a minimum advance royalty of US$250,000 by the fifth anniversary of the effective date and all anniversaries thereafter until termination of the agreement. The advance royalty will be credited towards the calculated royalty owed to GeoXplor.

These claims were established using location monuments during ground staking. During the property visit, the author checked several locations to confirm the presence of claim staking in the field. The BLM database was reviewed and all claims subject to this report are reported in this database.

Until such point that Pure Energy Minerals attains 100% interest in the GeoXplor claims, it has unrestricted access to the claims to perform exploration work or any other works required to investigate the land or the processing of the resources contained beneath it. In order to maintain the claims, Pure Energy Minerals must submit the annual BLM maintenance payments and advance the property as per the conditions listed above. There is no set expiration of the claims as long as these items are executed annually.

There are no known environmental liabilities for the GeoXplor claim area. In addition, there are no known significant factors or risks that may affect access, title or the right or ability to perform work on the GeoXplor claim area.

4.2.2 Nevada Alaska Mining CD/CE Claims

The Nevada Alaska Mining claims (outlined in blue on Figure 3) consist of 54 association placer claims covering approximately 1,044 ha (2,581 ac) in the eastern and southern part of Pure Energy's claim area. A list of the claims is provided in Table 2 below.

Table 2: List of Nevada Alaska Mining Claims

Claim Name	Number	BLM NMC Number	Esmeralda County Doc #	Approximate Claim Area (acres)
CE	1-4	1103856-1103859	0193320-0193323	4 claims each approx. 40 acres
CE	5	1109077	0193324	1 claim approx. 40 acres
CE	6	1103860	0193325	1 claim approx. 40 acres
CE	7	1109078	0193326	1 claim approx. 40 acres
CE	8	1103861	0193327	1 claim approx. 40 acres
CE	9-11	1109079-1109081	0193328-0193330	3 claims approx. 40 acres each
CE	12-15	1103862-1103865	0193331-0193334	4 claims approx. 40 acres each
CE	16-17	1109082-3	0193335-6	2 claims approx. 40 acres each
CE	18	1103866	0193338	1 claim approx. 40 acres
CE	20	1103867	0193339	1 claim approx. 40 acres
CE	21	1109084	0193340	1 claim approx. 37 acres
CE	23-25	1109085-1109087	0193342-0193344	3 claims approx. 40 acres each
CE	26	1103868	0193345	1 claim approx. 37 acres
CE	27-30	1109088-1109091	0193346-0193349	4 claims approx. 40 acres each
CE	33-42	1109092-1109101	0193350-0193359	9 claims approx. 40 acres each, 1 claim approx. 37 acres
CE	43	1103869	0193360	1 claim approx. 40 acres
CE	44-48	1109102-1109106	0193360-0193365	5 claims approx. 40 acres each
CD	116-131	1109067-1109076	0193312-0193319, 0193308, 0193310	10 claims approx. 80 acres each

The Nevada Alaska Mining claims were first staked and claimed in 2014 and were offered to Pure Energy Minerals in late 2014/early 2015. The final lease agreement ('definitive agreement') between Pure Energy Minerals Ltd and Nevada Alaska Mining

Co. Inc. was signed on May 31, 2015 ('effective date'), and includes the following terms that allow Pure Energy to hold a 100% interest in the placer claims:

- Cash payments to be made to Nevada Alaska Mining of;
  - CDN$35,000 on effective date;
  - CDN$35,000 on or before the first, second, third and fourth anniversaries of effective date;
  - US$75,000 on or before the fifth anniversary date, and each anniversary date thereafter while the definitive agreement remains valid;
- Common shares of Pure Energy Minerals Ltd to be transferred to Nevada Alaska Mining as per;
  - 200,000 common shares on the effective date;
  - The number of common shares (at time of calculation) that are equivalent to the cash value of the currency difference between the CDN and US exchange rate per the $35,000 lease fee on or before the first, second, third and fourth anniversaries of effective date;
- Upon Pure Energy Minerals entering commercial production on any part of the Nevada Alaska Mining claims, Nevada Alaska Mining will be entitled to a 3% Net Smelter Return (NSR) on all minerals extracted, payable quarterly, within 10 days of the quarterly end date, and will be prorated to consider the amount of brine withdrawn and the lithium content therein from beneath the CE/CD claims as a fraction of the total amount of brine processed;
- Pure Energy Minerals can buy-out ownership of the lease from Nevada Alaska Mining by a single payment of US$500,000 in cash or the equivalent in common shares of Pure Energy (subject to a 4 month hold before they become free trading). Nevada Alaska Mining will retain the royalty interest in the property following the buy-out transaction.

These claims were established using location monuments during ground staking. During the property visit, the author checked several locations to confirm the presence of claim staking in the field. The BLM database was reviewed and all claims subject to this report are reported in this database.

Until such point that Pure Energy Minerals attains 100% interest in the Nevada Alaska Mining claims, it has unrestricted access to the claims to perform exploration work or any other works required to investigate the land or the processing of the resources contained beneath it. In order to maintain the claims, Pure Energy Minerals must submit the annual BLM maintenance payments and advance the property as per the conditions listed above. There is no set expiration of the claims as long as these items are executed annually.

There are no known environmental liabilities for the Nevada Alaska Mining claim area. In addition, there are no known significant factors or risks that may affect access, title or the right or ability to perform work on the Nevada Alaska Mining claim area.

4.2.3 Esmeralda Minerals CL Claims

Esmeralda Minerals LLC is a wholly owned US subsidiary of Pure Energy Minerals Ltd. The Esmeralda Minerals claims (outlined in black on Figure 3) consist of 48 simple placer claims covering approximately 390 ha (963 ac) in the southern part of Pure Energy's claim area. A list of the claims is provided in Table 3 below.

Table 3: List of Esmeralda Minerals Mining Claims

Claim Name	Number	BLM NMC Number	Esmeralda County Doc #	Approximate Claim Area (acres)
CL	61	1109800	0193527	1 claim approx. 20 acres
CL	62	1109801	0193528	1 claim approx. 20 acres
CL	67	1109802	0193529	1 claim approx. 20 acres
CL	71	1109803	0193530	1 claim approx. 20 acres
CL	72	1109804	0193531	1 claim approx. 20 acres
CL	79	1109805	0193532	1 claim approx. 20 acres
CL	87	1109806	0193533	1 claim approx. 20 acres
CL	95-97	1109807-9	0193534-6	3 claims approx. 20 acres each
CL	103-106	1109810-13	0193537-40	4 claims approx. 20 acres each
CL	111-115	1109814-18	0193541-45	5 claims approx. 20 acres each
CL	121-127	1109819-25	0193546-52	7 claims approx. 20 acres each
CL	133-136	1109826-29	0193553-56	4 claims approx. 20 acres each
CL	143-152	1109830-39	0193557-66	10 claims approx. 20 acres each
CL	157-164	1109840-47	0193567-74	8 claims approx. 20 acres each

The Esmeralda Minerals claims were first staked and claimed in early 2015 and were recorded in March 2015. As the claims are 100% owned by a wholly owned subsidiary of Pure Energy, there are no lease fees, royalties, work commitments or other encumbrances owing to third parties in relation to the claims, other than annual payment of BLM and County maintenance fees.

These claims were established using location monuments during ground staking. During the property visit, the author checked several locations to confirm the presence of claim staking in the field. The BLM database was reviewed and all claims subject to this report are reported in this database.

Pure Energy Minerals has unrestricted access to the Esmeralda Minerals claims to perform exploration work or any other works required to investigate the land or the processing of the resources contained beneath it. In order to maintain the claims, Pure Energy Minerals must submit the annual BLM maintenance payments only. There is no set expiration of the claims as long as these items are executed annually.

There are no known environmental liabilities for the Esmeralda Minerals claim area. In addition, there are no known significant factors or risks that may affect access, title or the right or ability to perform work on the Esmeralda Minerals claim area.

4.3 Permitting

No environmental or cultural impact studies pertaining to the possible future extraction of the Clayton Valley South resource have been completed to date. Previous environmental and archaeological studies of possible drillpad locations were performed by Rodinia in 2009/10 and were submitted to the BLM as part of a proposed Plan of Operations application.

The drilling work performed by Pure Energy Minerals Ltd and described elsewhere in this report was completed using a Notice of Intent permitting process that was submitted to and approved by the BLM. This process entails providing a short description of the proposed works, plus supporting drawings and accompanying bonding, until such time that the works are complete and the area is reclaimed to its previous condition. At the time of writing of this report, the Notice of Intent permit was still current for the drilling work completed at CV-1 and CV-2. No additional permitting was required for the work completed.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Clayton Valley South placer claims are easily accessed from the small township of Silver Peak and lie to the south of the long-established lithium operations, currently owned and operated by the Albemarle Corporation (see Figures 2 and 4). Silver Peak is approximately 61 km (38 miles) from Tonopah, which is the regional commercial centre, and approximately 45 km (28 miles from Goldfield, which is the County Seat of Esmeralda County. Access to and across the site from Silver Peak is via a series of gravel/dirt roads. The main gravel roads that run south and southeast from Silver Peak into the project area are well maintained and easily accessible with a normal 2WD vehicle. The minor gravel/dirt roads that criss-cross the property are typically not maintained and can require 4WD to negotiate safely, particularly after high winds have caused drifting sand to form on the roads.

5.2 Climate and Vegetation

Clayton Valley has a generally arid to semi-arid climate, characterised by hot dry summers and cold winters. The climate is influenced strongly by the Sierra Nevada Mountains to the west, which produce a pronounced rain shadow, and have the general effect of making Nevada the driest state in the US. Precipitation is scattered throughout the year, with slightly more precipitation in late winter/early spring. During the winter months, high-pressure conditions predominate resulting in west-to-east trending winds and precipitation patterns. During the summer months, low-pressure conditions predominate, resulting in southwest-to-northeast trending precipitation patterns. Winter storm events tend to last longer and produce more precipitation than the summer events, which tend to produce widely scattered showers of short duration; drought is common and can last for more than 100 days.

The average potential evaporation rate for Esmeralda County exceeds the average annual precipitation, and on an annual basis as much as 95% of the total annual precipitation is lost through evaporation and transpiration (less than 10% recharges to groundwater). Localised dust storms are common in Clayton Valley, and typically form later in the day after pronounced solar heating of the ground surface (all general climate information sourced from Esmeralda County Water Resource Plan; accessesmeralda.com). Average weather data for Silver Peak are provided in Table 4 below (source: Western Regional Climate Centre).

The operating season for the purposes of exploration is effectively year-round. There are periods where heavy rainfall may cause minor localised flooding of access roads, and in this instance, access may be limited onto the playa floor for a few days.

An overall view of the landscape in the southern half of Clayton Valley is provided in Figures 6 and 7.

Figure 4: Land Status Map

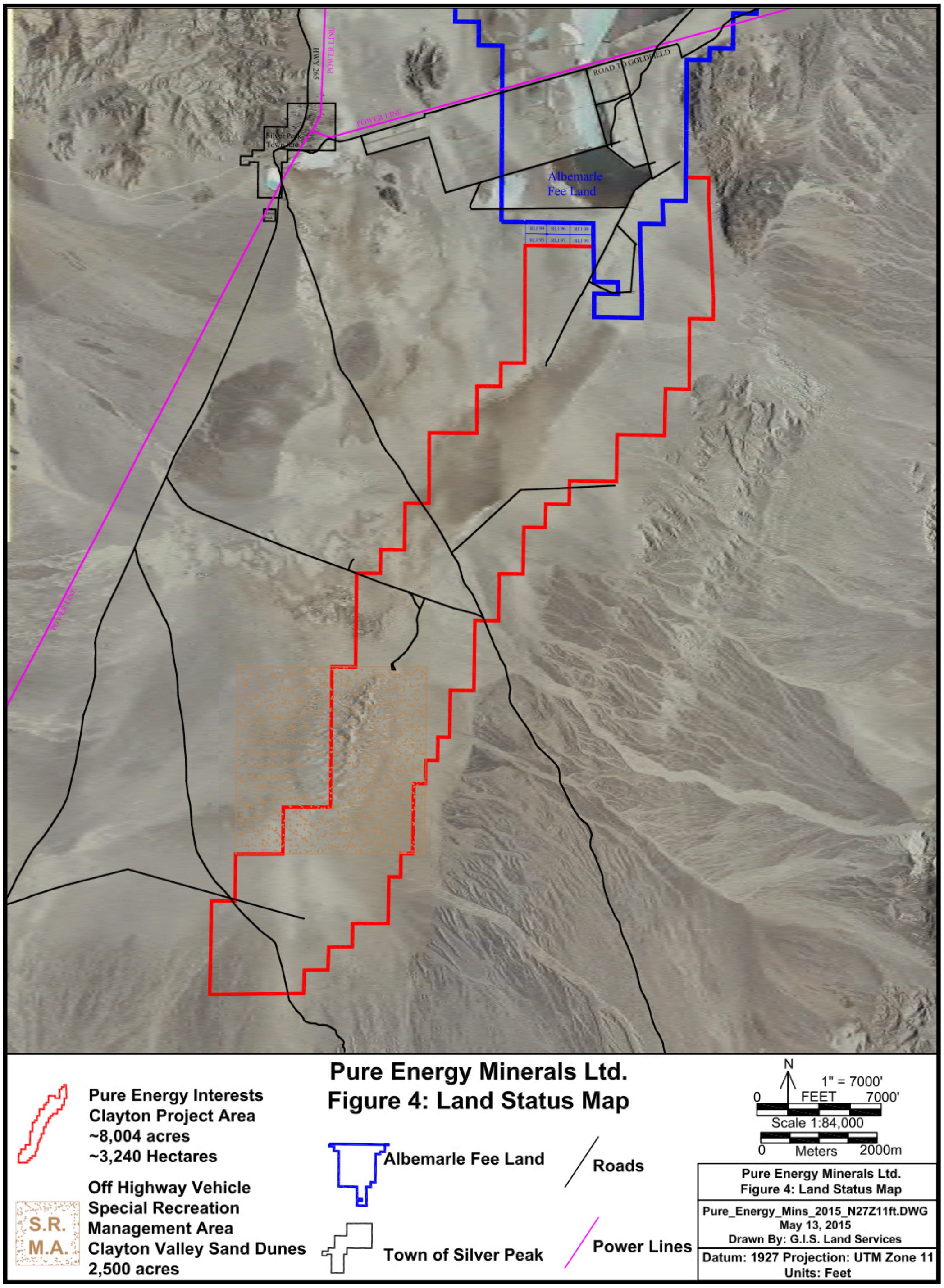


Table 4: Average Weather Data for Silver Peak, Nevada

Month	Average Max Temp °F	Average Min Temp °F	Average Total Precip. inches	Average Total Snowfall inches
Jan	47.3	18.8	0.31	0.3
Feb	54.2	24.7	0.38	1.2
Mar	61.8	31.7	0.54	0.5
Apr	69.5	38.1	0.39	0.1
May	79.4	47.9	0.36	0.0
Jun	90.3	56.9	0.25	0.0
Jul	97.5	62.6	0.44	0.0
Aug	95.2	59.9	0.48	0.0
Sep	86.6	50.5	0.44	0.0
Oct	72.9	38.2	0.36	0.2
Nov	57.5	26.4	0.29	0.1
Dec	46.4	17.6	0.17	0.1
Annual Average or Total	**71.6**	**39.4**	**4.43 (total)**	**2.4 (total)**

Note: Data sourced from Western Regional Climate Centre for Period of Record for Silver Peak weather station (Station # 267463); Oct 1967 to Jan 2015.

Vegetation coverage across the site area is generally very sparse, with many areas on the flat playa floor and the sand dune area having effectively no vegetation cover at all. Away from the very lowest part of the playa floor, the vegetation consists of a mixture of low scrub and grasses forming high desert, prairie or shrub-steppe vegetation populations. Previous biological fieldwork completed at the site reported a mix of Saltbush, Greasewood Bush, Pickleweed, Saltgrass and Russian Thistle, with other occasional minor species (EPG Inc. Sept 2011).

5.3 Local resources

Silver Peak is the nearest census-designated settlement, with a population of approximately 117 at the 2006 census. However, the population of the town varies depending on various economic factors, as there are a significant number of temporary workers from the hard-rock mining operations that lie to the immediate west and southwest of Silver Peak that live often year-round in a series of mobile homes and trailers on the northern side of the town. The unincorporated town has a US Post Office (ZIP code 89047), fire/EMS station, small school and a tavern. There are no significant services/shops in Silver Peak. The main employers are the lithium-brine operation of Albemarle Corp and other hard-rock mining operations in the Clayton Valley area.

Goldfield is the County Seat for Esmeralda County with a population of 430 at the last census in 2006. It has a series of small markets/convenience stores, a small restaurant, motel and a gas station. As with Silver Peak, the population fluctuates depending on economic factors, as there are several small mining operations close to Goldfield that open and close with varying commodity prices. The County buildings in Goldfield house all the claim records for the various mining claims in Clayton Valley.

Tonopah is the main commercial centre close to Clayton Valley and has a full range of services, including grocery stores, restaurants, hotels/motels, banks, hardware stores and government offices (e.g. local BLM office for recording claims, making permit applications etc.). The population of Tonopah was 2,478 in the 2010 census, and is the County Seat of Nye County. Employment in Tonopah is a mixture of service jobs, military (Tonopah Test Range), mining and industrial jobs related to the nearby Crescent Dunes concentrating solar plant.

5.4 Infrastructure

A series of well-maintained state highways connect Silver Peak to the main road network in Nevada and beyond, and graded and maintained gravel roads link Silver Peak to the southern half of Clayton Valley. These roads connect Silver Peak to the local community of Lida in the south and allow year-round access to the project area. A series of unmaintained but good condition gravel roads run along the site and allow access to almost all parts of the project area.

The nearest rail system is in Hawthorne, Nevada, approximately 145 km (90 miles) by road to the north of Silver Peak. This rail system is operated by Union Pacific and links northwards towards the main Union Pacific rail system in the Sparks/Reno area. There is a County-owned, public use airport in Tonopah that has two runways, each approximately 2 km (7,000 ft) long.

Electrical connection is possible at the sub-station in Silver Peak (see Figure 5 below). This sub-station connects a pair of 55kV lines that form an electrical intertie between the Nevada and California electrical systems (maximum power capacity exchange allowed of 17 MW across the intertie), with two 55kV lines that link the sub-station to the main electrical grid in Nevada. One of the 55kV lines from the sub-station runs northwards to the Millers sub-station that lies approximately 47 km (29 mi) northeast from Silver Peak, and at this point, the 55kV line interconnects to the 120kV transmission system (and then the 230kV system just north at the Crescent Dunes plant and Anaconda Moly sub-station). The other 55kV line runs east from Silver Peak and feeds back into Goldfield and Tonopah. Total electricity usage by the existing Albemarle lithium facility is reported as averaging 1.89 MW, with maximum usage of 2.54 MW (DOE/EA-1715, Sept 2010); note that a typical 55kV line is capable of transferring 10-40 MW of power depending on local factors.

Figure 5: Silver Peak Electrical Substation

Water supply is currently served by the Silver Peak municipal water supply. This is serviced by three wells that abstract water from alluvial fans on the western flank of Clayton Valley, approximately 1 km (0.62 mi) southwest of the town. Transmission lines, roads and main landholdings are shown in Figure 4.

The current claim areas (see Figure 4) are sufficient for all proposed exploration activities. Although the final process for removing lithium from the brine has not been decided to date, there is sufficient room on the claim area to locate extraction wells, pumps and the necessary cabling and pipework to power the equipment and move brine from the wells to the processing site. As described in Section 13, it is unlikely that a traditional evaporation pond technology would be used to process the Clayton Valley South resource, and as such, only limited land would be required to locate a processing plant (i.e. much less than 5 hectares). Therefore there is ample land available within the existing claim areas to house a future processing plant and any associated infrastructure. Should it be deemed more efficient in the future to locate the plant closer to Silver Peak, then there is ample unrestricted BLM land close to the town which could be used to locate a future processing plant.

5.5 Physiography

Clayton Valley lies in a complex zone of disrupted structure between the northwest trending Sierra Nevada Mountain Range to the west, and the north-south trending Basin and Range province to the north and east. The valley has a total watershed area of 1,437 km^2 (555 mi^2) and the floor of the valley lies at an altitude of approximately 1,320 m ASL (4,320 ft ASL). The surrounding mountains rise generally several hundred meters above the valley floor, with the highest surrounding mountain being Silver Peak at 2,859 m ASL (9,380 ft ASL). The valley is bounded to the west by the Silver Peak Mountain Range, to the south by the Palmetto Mountains, to the east by Clayton Ridge and the Montezuma Range, and to the north by the Weepah Hills.

There is no permanent surface water in the Clayton Valley watershed, with the exception of the man-made evaporation ponds operated by Albemarle Corp. All watercourses are ephemeral and only active during periods of intense precipitation.

Clayton Valley lies at a lower elevation than the surrounding basins (Big Smoky Valley lies approximately 122 m (400 ft) higher; Alkali Flats Valley lies approximately 140 m (460 ft) higher, and it is interpreted to receive some sub-surface groundwater flow from these basins based on regional static groundwater levels.

Figure 6: Looking East across Northern Half of Pure Energy Claims

Figure 7: Looking Southeast across Southern Half of Pure Energy Claims

6 HISTORY

6.1 Silver Peak Operations

Clayton Valley is the location of the only operating lithium mine in North America. Albemarle Corporation is the present owner of the brine processing evaporation pond and plant complex, known as the Silver Peak Operations, which has been in existence since 1967. Previous owners include Newmont (Foote Mineral Company), Chemetall-Foote Corporation and Rockwood Holdings, Inc. Albemarle Corporation purchased Rockwood Holdings, Inc. in 2014 for US$6.2 Billion, which included the Salar de Atacama brine operation in Chile, a lithium chemical processing plant in North Carolina and the Silver Peak operations in Nevada.

Production data from the Silver Peak operations is proprietary and unpublished. However, the 2014 Rockwood Holdings Inc. Annual Report cites production in 2013 at 870 metric tons Li. Previous production was reported by Price, Lechler, Lear and Giles (2000) at 25,600 metric tons Li through 1991. Garrett (2004) reported 5,700 metric tons Li_2CO_3, (1,072 metric tons Li) in 1997. The Li concentration in the production brines averaged 400 ppm initially, dropped to 300 ppm in 1970 and 160 ppm in 2001 (Garrett, 2004). Table 5 shows selected analyses from Albemarle's Annual Water Pollution Control Permit reports.

Table 5: Selected Albemarle Well Analyses (Source: Annual Water Pollution Control Permits)

Laboratory Used		WETLAB	WETLAB	WETLAB	WETLAB	WETLAB	WETLAB
Sampling Date		14-Jan-09	15-Dec-09	15-Dec-10	15-Dec-11	17-Dec-12	30-Dec-13
	Sample ID	**392 Well**	**109 Well**	**392 Well**	**378 Well**	**304 Well**	**8B Well**
Notes		1	2	1	3	4	5
Method for metals analysis	Units	ICPMS	ICPMS	ICPMS	ICPMS	ICPMS	ICPMS
Total Boron (B)	mg/L	50	58	52	40	58	130
Total Lithium (Li)	mg/L	82	170	120	140	120	310
Total Calcium (Ca)	mg/L	160	520	390	350	-	460
Total Magnesium (Mg)	mg/L	92	190	310	260	ND	340
Total Potassium (K)	mg/L	2200	4900	2500	2700	3400	7800
Total Sodium (Na)	mg/L	26000	46000	25000	26000	33000	55000
Dissolved Sulphate (SO4)	mg/L	2200	2600	1800	1600	2400	5400
Dissolved Chloride (Cl)	mg/L	49000	88000	36000	34000	52000	94000
Total Dissolved Solids	mg/L	71000	13000	49000	57000	84000	160000
- = Not analysed	1	Latitude 37°46'56.05"N; Longitude 117°32'57.53"W					
ND=No data	2	Latitude 37°47'35.48"N; Longitude 117°31'35.48"W					
Notes:	3	Latitude 37°46'21.00"N; Longitude 117°33'5.42"W					
	4	Latitude 37°47'7.70"N; Longitude 117°31'23.10"W					
	5	Latitude 37°46'2.21"N; Longitude 117°34'1.14"W					

The historical lithium brine resource in Clayton Valley has been estimated at 0.7 Mt Li (Kunasz, 1975), 0.65 Mt Li (Price et al., 2000) and 0.4 Mt Li (Yaksic and Tilton, 2009).

These resource estimates cannot be confirmed and are not necessarily indicative of the mineralization on the property that is the subject of this technical report.

6.2 Historical Drilling

The USGS drilled 5 exploration holes in Clayton Valley in 1997 on what is now the Silver Peak operations patented property, all north of the Pure Energy claims. Zampirro (2004) states that several hundred exploration and production wells, which ranged in depth from 70 m to 355 m (230 ft to 1160 ft), were drilled in the valley by the Silver Peak operation between 1964 and 2004. The drilled area encompassed some of the southern portion of Clayton Valley, including part of the Pure Energy claims. The Silver Peak operations planned to drill deeper in the future.

6.3 Rodinia Lithium Exploration 2009-2010

Rodinia Lithium, Inc., under its wholly owned Wyoming subsidiary Donnybrook Platinum Resources, Inc. and GeoXplor Corp., acquired 1,012 lode and placer claims (total of 72,340 acres), on Bureau of Land Management (BLM) land in Clayton Valley. The claims surrounded, and were adjacent to, the existing Silver Peak lithium operations to the north, east and south. The preponderance of the claims covered the south valley and included the current Pure Energy interest. In 2009, Rodinia completed 3.6 km seismic survey on the north side of Clayton Valley to define the depth to basement and location of the Paymaster Fault, a north-south structure thought to control lithium brine movement. Rodinia followed with a gravity survey by Hasbrouck Geophysics Inc. and completed a 274-point gravity survey and subsequent report on the Rodinia claims. The results defined a 1.0-1.7 km (0.6-1 mile) deep structural trough oriented northeast-southwest across the southern valley. The trough extends through the length of the Pure Energy claims (Appendix 2).

Rodinia completed 9 Dual Wall Reverse Circulation (DWRC) boreholes during 2010 around the perimeter of the existing Albemarle operation (Table 6). Of significance to this report are 2 drill holes, SPD-8 and SPD-9, located near the southeast portion of the Albemarle patented claims (northeast portion of the Pure Energy claims). These holes penetrated zones of anomalous Li content (Table 7; plus also see Keast, 2011, Tables 4 & 5).

Table 6: Rodinia Lithium Exploration Drill Hole Summary

Hole #	BLM	East (UTM)	North (UTM)	Elev (est. in ft)	Depth (ft)	Depth (m)	
SPD-1	SPD-1	11454878	4186762	4268	380	116	Hole not logged, No lithium values
SPD-2	SPD-13	11455000	4186000	4268	1040	317	
SPD-3	SPD-21	11456900	4183700	4280	600	183	
SPD-4	SPD-6	11454878	4186762	4340	60	18	Hole abandoned
SPD-5	SPD-7	11455280	4182010	4230	1390	424	
SPD-6	SPD-8	11456770	4182593	4380	1040	317	
SPD-7	SPD-10	11448350	4183430	4260	540	165	No sample return
SPD-8	SPD-25	11449597	4174732	4280	1280	390	
SPD-9	SPD-24	11450751	4176749	4280	1620	494	
					7,950	**2423**	

Table 7: Rodinia Lithium Selected Analyses from SPD-8 and SPD-9

Rodinia Lithium DrillHole SPD-8 and SPD-9 Selected Analyses										
	Meters		mg/L							
Well	From	To	Li	B	Ca	Mg	K	Na	SO4	Cl
SPD-8	323.1	384.0	37	1	1820	283	631	10480	843	22600
SPD-9	146.3	170.7	145	24	470	195	2525	23000	2575	45750
	170.7	201.2	370	29	672	452	6540	61400	9080	10800
	201.2	341.4	259	15	1105	475	4186	46095	8333	83095
	341.4	493.8	139	9	866	481	1600	33920	4696	67240

In 2010 Rodinia completed several segments of an Exploration Plan of Operation, a document required for further exploration and land disturbance beyond the initial five acre BLM permit. Cultural and environmental surveys were completed by independent contractors on acreage proposed for an extensive drilling program in the south portion of Clayton Valley. Rodinia eventually dropped all claims in order to concentrate resources on its Salar de Diablillos lithium project in the Puna of Argentina.

7 GEOLOGICAL AND HYDROGEOLOGICAL SETTING

7.1 Geological setting

The following review of the geological and hydrogeological setting of Clayton Valley was provided by Dr. LeeAnn Munk.

Clayton Valley is located within the Basin and Range Province in southern Nevada. It is a closed-basin that is fault bounded on the north by the Weepah Hills, the east by Clayton Ridge, the south by the Palmetto Mountains and the west by the Silver Peak Range and Mineral Ridge (Figure 2). The general geology of Clayton Valley is illustrated in Figure 8. This area has been the focus of several tectonic and structural investigations because of its position relative to Walker Lane, the Mina Deflection and the Eastern California Shear Zone (McGuire, 2012; Burris, 2013). The basement rock of Clayton Valley, NV consists of late Neoproterozoic to Ordovician carbonate and clastic rocks that were deposited along the ancient western passive margin of North America. During late Paleozoic and Mesozoic orogenies, the region was shortened and subjected to low-grade metamorphism (Oldow et al., 1989; Oldow et al., 2009) and granitoids were emplaced at ca. 155 and 85 Ma. Extension commenced at ca. 16 Ma and has continued to the present, with changes in structural style as documented in the Silver Peak-Lone Mountain Extensional Complex (Oldow et al., 2009; Burris, 2013). A metamorphic core complex just west of Clayton Valley was exhumed from mid-crustal depths during Neogene extension. There is a Quaternary cinder cone and associated basaltic lava flows in the northwest part of the basin.

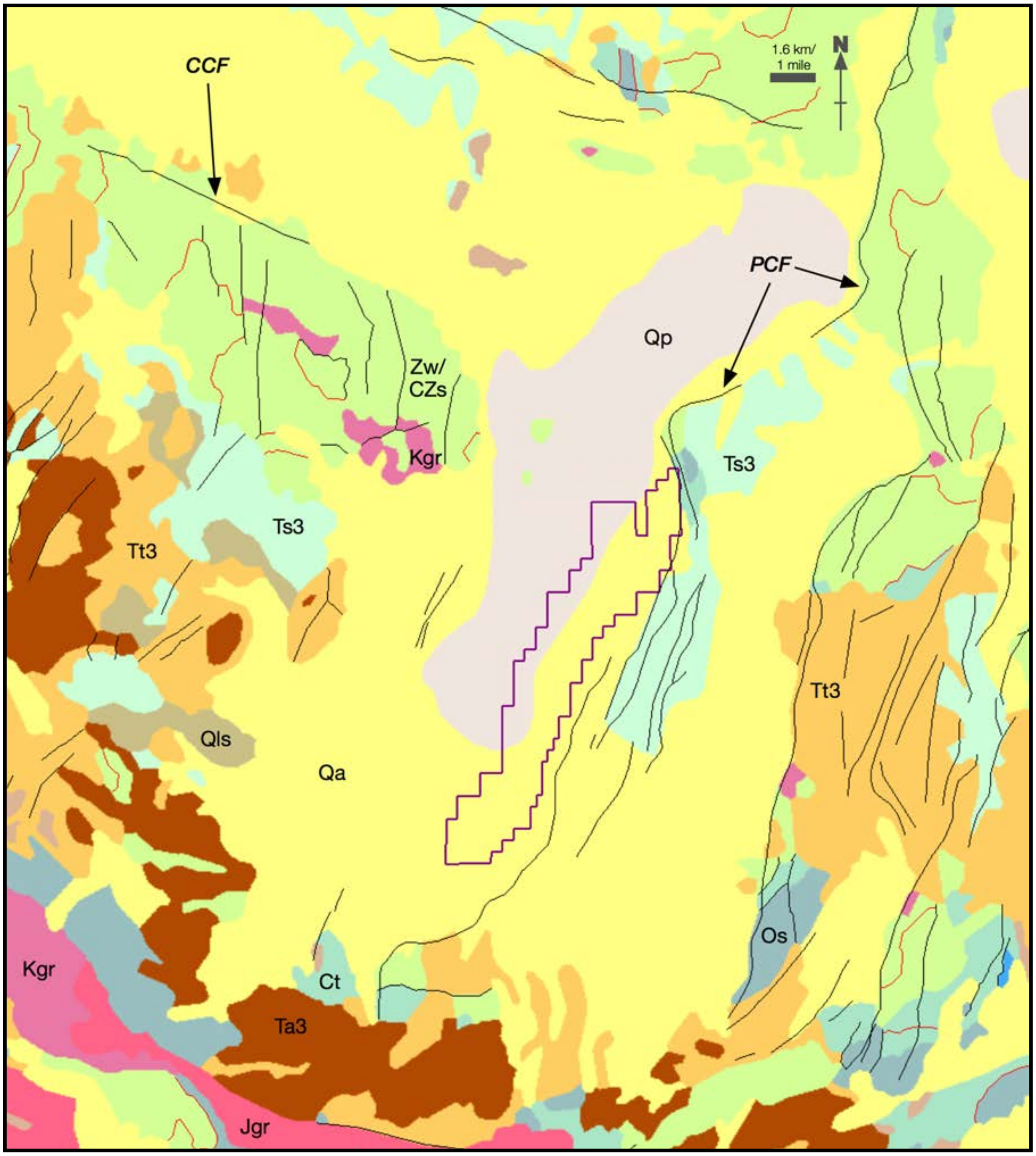
The basin is bounded to the east by a steep normal fault system toward which basin strata thicken (Davis et al., 1986). These basin-filling strata compose the aquifer system which hosts and produces the lithium-rich brine (Zampirro, 2004; Munk et al., 2011). The north and east parts of Clayton Valley are flanked with Miocene to Pliocene sediments containing multiple primary and reworked volcanic ash deposits within fine-grained clay and silt units. These deposits are a part of the Esmeralda Formation first described by Turner (1900) and later by Stewart (1989) and Stewart and Diamond (1990). The Esmeralda Formation is a sedimentary sequence grading from coal-bearing siltstones, sandstones and conglomerates at the base to fine-grained tuffaceous lacustrine sediments at the top of the section. This formation is primarily mapped in the areas north of Clayton Valley (Stewart and Diamond, 1990) but there are also lacustrine deposits composed primarily of clays and fine-grained sediments with volcanic ash layers on the east side of Clayton Valley described as Esmeralda Formation by Kunasz (1974) and Davis (1981).

Recent work by Burris (2013) aimed at unravelling the tectonic and structural history of the Weepah Hills area to the north of Clayton Valley reports a series of zircon helium ages for three volcanic-sedimentary depositional units from the upper plate in the Weepah Hills area. These are considered eruptive ages and include the Lone Mountain (23-18 Ma) unit, the Esmeralda Formation (12-10 Ma) and the Alum Mine Formation (10-6 Ma). Ongoing work by L. Munk (pers. comm.) includes efforts to date volcanic-sedimentary units from the east side of the basin as well as from downhole samples in order to further understand the depositional history of these units and possible correlation with surface outcrops.

Multiple wetting and drying periods during the Pleistocene resulted in the formation of lacustrine deposits, salt beds, and lithium-rich brines in the Clayton Valley basin. The Late Miocene to Pliocene tuffaceous lacustrine facies of the Esmeralda Formation contain up to 1,300 ppm lithium and an average of 100 ppm lithium (Kunasz, 1974; Davis and Vine, 1979). Hectorite (lithium bearing smectite) in the surface playa sediments contains from 350 to 1,171 ppm lithium (Kunasz, 1974). More recent work by Morissette (2012) confirms elevated lithium concentrations in hectorite in the range of 160-910 ppm from samples collected on the northeast side of Clayton Valley. Miocene silicic tuffs and rhyolites along the basin's eastern flank have lithium concentrations up to 228 ppm (Price et al., 2000).

Prior to development of the brine resource in Clayton Valley, a salt flat and brine pool existed in the northern part of the basin, but groundwater pumping has eliminated the surface brine pool. The presence of travertine deposits which occur in the northeast part of the valley, as well as the west and central parts of the valley are also evidence of past hot spring activity on the valley floor. At the base of Paymaster Canyon, gravity and seismic surveys have been used to map the Weepah Hills detachment fault but also reveal the presence of tufa at depth coincident with a geothermal anomaly (McGuire, 2012). This area and another just north of the town of Silver Peak are underlain by aquifers that contain hot water (~50-60°C) and approximately 40 ppm lithium (L. Munk, pers. comm.). Hot spring deposits in these locations and others in the basin have also been mapped by Hulen (2008).

Figure 8: Geological Map



Key: ***CCF*** Cross-Central Fault**;** ***PCF*** Paymaster Canyon Fault**; Qp** Quaternary alluvial and playa deposits**; Qa** Quaternary alluvial deposits**; Qls** Quaternary landslide deposits**; Ts3** Late Eocene to Late Miocene tuffaceous sedimentary rocks**; Tt3** Middle Miocene to Late Miocene welded and non-welded silicic ash-flow tuffs**; Ta3** Late Miocene to Middle Miocene Andesite and related intermediate rocks**; Kgr** Cretaceous granitic rocks**; Jgr** Jurassic granitic rocks**; Os** Ordovician shales and cherts**; Ct** Cambrian shales and limestones**; Zw/CZs** Precambrian and Cambrian phyllites**. Solid black lines are normal faults; solid red lines are thrust faults; purple outline shows project area. Data sourced from USGS.**

7.2 Hydrogeological setting

Clayton Valley is an internally drained closed-basin that lies within the eastern rain shadow of the Sierra Nevada Mountains. Clayton Valley is a topographic low surrounded by mountainous highlands that drain into the basin. Interbasin flow into Clayton Valley was first proposed by Rush (1968) in order to close the water budget for the basin. The conceptual model for the Death Valley area (USGS, 2006) indicates intermediate and regional flow paths for the region and this could also be representative for the Clayton Valley area to the north. The majority of the water in Clayton Valley occurs in the subsurface but some minor surface water occurs as cold springs in surrounding highlands mostly to the north, west and south.

The general structure of the north part of the Clayton Valley basin is known from geophysical surveys and drilling to be a graben structure with its most down-dropped part on the east-northeast side of the basin along the extension of the Paymaster Canyon Fault and Angel Island Fault (Zampirro, 2004). To the east of this fault in the north and east parts of the basin are the older Paleozoic rocks exposed on Angel Island. However, there are some remnants of sediments and ashes from the Esmeralda Formation exposed along narrow and faulted outcrops along the west side of Angel Island. These sediments and ashes have also been identified in well borings in the basin (Munk and Chamberlain, 2011) and are part of the aquifer systems.

A similar graben structure has been identified in the south part of the Clayton Valley basin through gravity and seismic survey (see appendices).

The structural opening of the graben allowed for the deposition of sediments into the basin. Generally the sediments and ashes that were deposited in the basin are along a northeast-southwest trend with a dip to the southeast as shown in the conceptual model of Zampirro (2004, fig. 4; note that this is based on data in the northern part of the basin only). These pluvial and interpluvial sediments along with volcanic ashes are what now compose the aquifer systems which host the lithium brines currently being produced (Zampirro, 2004).

The following information regarding the known aquifers is based primarily on the subsurface geology of the north part of Clayton Valley and what is known about the aquifers from which the brines are produced for the current lithium mining operation. Hundreds of drill holes up to about 600 m deep have been drilled in Clayton Valley for exploration and production purposes since 1964 (Zampirro, 2004). The six aquifers are divided and defined based on stratigraphic position and lithological characteristics. The general stratigraphic order of the aquifers from deepest to most shallow is the Lower Gravel Aquifer (LGA), the Lower Aquifer System (LAS), Main Ash Aquifer (MAA), the Marginal Gravel Aquifer (MGA), the Salt Aquifer System (SAS) and the Tufa Aquifer System (TAS), the latter two with similar stratigraphic positions at shallow depths (Zampirro, 2004). The MGA has been defined as occurring along the east side of the north part of Clayton Valley along the extension of the Paymaster Canyon Fault south to the west side of Angel Island. Its stratigraphic character is different from the more or less tabular nature of the other aquifers.

The LGA is the deepest aquifer which generally is encountered at about 300 m below the playa surface and varies in thickness from 50-100 m. It is composed primarily of poorly sorted coarse to fine gravel, sand and silt. The LAS is a series of thin interbedded volcanic ash layers and silt and sand and varies in thickness from 10-90 m. The MAA is an extensive pumice-rich volcanic ash deposit that varies in thickness from 5-20 m. Volcanic glass from this aquifer shares strong compositional affinities with the ~750 ka

Bishop Tuff (Munk et al., 2011), however, it could also be correlated to the 0.8-1.2 Ma tuffs of Glass Mountain (Sarna-Wojcicki et al., 2005). According to Zampirro (2004), the MAA is the largest and most productive aquifer in the north of Clayton Valley. The SAS is composed of thick bedded halite with silt layers interbedded and is 30-100 m thick. The TAS is a localized aquifer found in the northeast part of the basin and is composed of travertine deposits 6-20 m in thickness (Munk et al., 2011).

7.3 Brine Geochemistry and Sources of Lithium

The lithium brine geochemistry and composition were first investigated by Davis and Vine (1979) and Davis et al. (1986) and more recently and extensively studied by Munk et al. (2011), Jochens and Munk (2011) and L. Munk (pers. comm.). In general, the brines from the north part of Clayton Valley are Na-Cl in composition and have Li concentrations in the range of 60-400 mg/L lithium. The brines extracted from the Pure Energy CV-1 well in 2015 are most similar in terms of sodium and lithium concentration to the brines pumped from the MAA.

Ongoing work (L. Munk, pers. comm.) since 2010 to investigate the origin of the lithium brine in Clayton Valley has resulted in a detailed study of the brines pumped from all six of the aquifers in the north part of the basin as well as surface water (hot and cold springs within and outside the basin) and subsurface geothermal waters in the basin. The investigation by L. Munk and her colleagues includes detailed field parameters for all waters including temperature, specific conductivity, pH, dissolved oxygen, and oxidation-reduction potential. The geochemical parameters investigated include lithium, major cations and anions, water stable isotopes, lithium and strontium isotopes, tritium, chlorofluorocarbons (CFCs) and noble gases in order to test multiple hypotheses about the brine origin. The research also involves a detailed investigation of the geochemistry and ages of key geologic units in the basin.

The following is a summary of some of the major findings to date from the research by L. Munk and her colleagues. Water stable isotope data ($\delta^{18}O$ and δD) for the brines collected in the north part of the basin indicate that there is influence from water-rock interaction related to geothermal activity as well as from evaporation (Munk et al., 2011; Munk pers. comm.). Preliminary $\delta^{7}Li$ (Munk et al., 2011) and $^{87}Sr/^{86}Sr$ signatures (Munk pers. comm.) of the brines indicate that the lithium in the brines may be leached from clays in the subsurface by geothermal waters and then transmitted into the various aquifers. Araoka et al. (2014) report $\delta^{7}Li$ values for clay samples collected from the surface of Clayton Valley. These values match those from the lithium brines and two geothermal waters from Clayton Valley (Munk et al., 2011; Munk pers. comm.). High temperature leaching of clays could result in the brines having a similar $\delta^{7}Li$ composition as the clays, whereas low temperature leaching of lithium from clays or rocks would result in a higher $\delta^{7}Li$ signature. Further analysis of clays from the subsurface and surface should be performed in order to better understand the processes responsible for concentrating lithium in the brines. Additionally, it is possible that lithium may be leached from the volcanic ash layers within the aquifers but that process is even less understood at this point and should be further investigated from downhole and surface samples.

However, low temperature leaching of lithium from Tertiary rhyolites from the surrounding bedrock in Clayton Valley likely plays a small to insignificant role as the source of lithium to the brines. Jochens and Munk (2011) showed that experimental leaching of these rocks results in only a few µg/L of lithium released into water, whereas Kunasz (1974) reports up to 140 mg/L water soluble lithium from the clay-sized fraction in the Esmeralda Formation on the east side of the basin. Additionally, Kunasz (1974) reports up to 623 ppm lithium in a sequence of altered volcanic ashes on the east side of Clayton Valley with 2,290 ppm in the less than 2 µm fraction from that sample which is composed of hectorite. Morissette (2012) reports lithium concentration in the clay size fraction from samples collected in the upper member of the Esmeralda Formation in the range of 1,140-4,950 ppm for six samples with a bulk lithium concentration ranging from 496-2,740 ppm. Morissette (2012) also reports the cation exchange capacity (CEC) of the clay size fraction for samples from the Esmeralda Formation in Clayton Valley to be approximately 32-52 meq/100g with 56-136 mg/L recoverable lithium from the CEC solutions. These clay size fractions within the Esmeralda Formation are clearly good candidates for sources of lithium to the brines in the basin as these same units are expected to occur in the subsurface.

The ultimate source of the lithium to the basin whether it is within the clays or the brines is still unknown. However, recent work by Hofstra et al. (2013) on high-silica rhyolite tuffs in the western United States provides evidence that lithium is concentrated within melt inclusions in quartz phenocrysts, which is subsequently released through micro-fractures during post-depositional processes. The lithium would be leached relatively quickly from these volcanic deposits in basins through weathering processes and subsequently concentrated through evaporation of playa lakes. This could be a viable model for the source of lithium in Clayton Valley, Nevada. However, no work on melt inclusions from the high-silica volcanic rocks at the surface or in the subsurface has been undertaken for this site.

7.4 Mineralisation

As discussed above, the lithium resource is hosted as a solute in a predominantly sodium chloride brine, and it is the distribution of this brine that is of relevance to this report. As such, the term 'mineralisation' is not wholly relevant, as the brine is mobile and can be affected by pumping of groundwater (for example from the adjacent Albemarle property), and by local hydrogeological variations (e.g. localised freshwater lenses in near-surface gravel deposits being affected by rainfall etc.).

However, as discussed in previous Technical Reports for the Clayton Valley area (Harrop, 2009; Keast, 2011), and as mentioned in Section 7.3 above, lithium is present in the basin not only as a solute, but also within the solid matrix that forms the basin infill deposits within the graben structures, particularly within the finer clay and silt fractions. Based on the isotopic signature of the lithium within the brines, there is a strong likelihood that exchange reactions occur between the solid matrix materials in the clastic basin and the brines, and therefore, it is possible that lithium is released from the solid phase into the aqueous phase and hence acts to supplement the resource. Currently, there are insufficient data to confirm this hypothesis, and the resource model considers only the brine encountered in porosity during drilling and pumping activities. Future work may be conducted that allows for expansion of the resource to include some portion of the solid material within the basin.

The extent of mineralisation in the Clayton Valley basin is relatively well understood based on exploration work previously completed in the basin, information from the producing Silver Peak lithium operations and from additional published and unpublished data provided by Dr. Munk (Munk pers. comm.; Munk, 2015 in press). As described above, the mineralisation is present within the finer-grained clastic sediments and ash/tuff layers that were deposited as part of a Pleistocene lake. Where described elsewhere (Zampirro, 2004), these sediments are typically found in the eastern half of the elongated Clayton Valley (see also Figure 9). The mineralisation is present as a series of aquifers that contain brines with varying concentrations of lithium. Where data exist, they tend to show that the aquifers are closer to the surface in the northern part of Clayton Valley, and that they deepen in the southern half, as the total thickness of the basin increases to the south, as does the thickness of the overlying alluvial gravels which do not contain mineralisation.

As such, very approximate bounds of the mineralised zone in Clayton Valley can be provided, although it should be noted that these are subject to considerable uncertainty. In the northern half of Clayton Valley, where the majority of the Silver Peak lithium operations are present, the mineralised zone has approximate extents of 12 km long x 3.5 km (7.5 mi x 2 mi) wide, with a varying thickness of 90 m (300 ft) to over 300 m (1000 ft). In the southern half of the valley, where the Pure Energy Minerals claims are located, the mineralised zone has approximate extents of 16 km (10 mi) long x 3.0–3.5 km (1.8 – 2.2 mi) wide, with an uncertain thickness, as the base of the mineralisation has not been reached in any exploratory borehole to date. However, a minimum thickness of 250 m (820 ft) has been reported (Keast, 2011).

It should be noted that there are other areas within Clayton Valley that may also hold similar levels of mineralisation.

8 DEPOSIT TYPES

Lithium is found in three main types of deposits, pegmatites, clays and continental brines. The continental brines are the most important of these resources on a global scale (Kesler et al., 2012).

Lithium pegmatites are coarse-grained igneous rocks that concentrate lithium at a late stage in cooling alkaline magmas. They range from simple to complex in terms of mineralogy, structure and provenance. The primary mined lithium mineral is Spodumene because of its high Li content and abundance in Li-pegmatites. Classic examples are the simple Spodumene pegmatites near Kings Mountain, North Carolina, US (inactive) and complex Spodumene pegmatites at Bernic Lake, Manitoba, (inactive) Canada and Greenbushes, Australia. Other minable pegmatite-sourced Li-minerals include Petalite, Amblygonite and Lepidolite.

Rio Tinto discovered a large lithium-borate evaporite deposit in the Jadar Basin, Serbia in 2004. In 2006 Jadarite, a unique Li-borate mineral, was identified in drill core and exploration at the site has been ongoing. Lithium clays, primarily Hectorite and Polylithionate, are associated with weathered volcanic deposits. Western Lithium Corporation's Kings Valley deposit in northwest Nevada, US, is in development stages, as is Bacanora Minerals' La Ventana deposit in Sonora, Mexico. Lithium extraction from clays, however, is unproven at this time.

Continental brines are the primary source of lithium products worldwide. Bradley, et al. (2013) noted that "all producing lithium brine deposits share a number of first-order characteristics: (1) arid climate; (2) closed basin containing a playa or salar; (3) tectonically driven subsidence; (4) associated igneous or geothermal activity; (5) suitable lithium source-rocks; (6) one or more adequate aquifers; and (7) sufficient time to concentrate a brine." The Li atom does not readily form evaporite minerals, remains in solution and concentrates to high levels, reaching 4,000 ppm at Salar de Atacama. Large deposits are mined in the Salar de Atacama, Chile (SQM and Albemarle), Salar de Hombre Muerto, Argentina (FMC) and Clayton Valley, Nevada (Albemarle), the only North American producer.

Lithium brine deposit models have been discussed by Houston et al. (2011), Bradley et al. (2013) and more extensively by Munk et al. (in press). Houston et al. (2011) classified the salars in the Altiplano-Puna region of the Central Andes, South America in terms of two end members, "immature clastic" or "mature halite," primarily using (1) the relative amount of clastic versus evaporate sediment; (2) climatic and tectonic influences, as related to altitude and latitude; and (3) basic hydrology, which controls the influx of fresh water. The immature classification refers to basins that generally occur at higher (wetter) elevations in the north and east of the region, contain alternating clastic and evaporite sedimentary sequences dominated by gypsum, have recycled salts, and a general low abundance of halite. Mature refers to salars in arid to hyperarid climates, which occur in the lower elevations of the region, reach halite saturation, and have intercalated clay and silt and/or volcanic deposits. An important point made by Houston et al. (2011) is the relative significance of aquifer permeability which is controlled by the geological and geochemical composition of the aquifers. For example, immature salars may contain large volumes of easily extractable Li-rich brines simply because they are comprised of a mixture of clastic and evaporite aquifer materials that have higher porosity and permeability. For example, the Salar de Atacama could be classified as a mature salar whereas the Clayton Valley salar has characteristics more like an immature salar.

9 EXPLORATION

Previous exploration at the Property was completed by Rodinia in 2009/10, and the latest phase of exploration performed by Pure Energy Minerals and their operator, GeoXplor, has been performed in late 2014/early 2015. The total work program completed at the Property to date has included the following:

- Reconnaissance Gravity Survey by Rodinia in 2009 to develop a general understanding of the size and extent of the basin and depth to bedrock;
- Detailed Gravity Survey of Northern part of Property by Pure Energy in late 2014 to better define the shape and depth of the northern part of the basin;
- Dual Wall Reverse Circulation (DWRC) drilling program completed by Rodinia in 2009/10 and combined DWRC and rotary mud drilling completed by Pure Energy in late 2014/early 2015 to develop vertical profiles of brine chemistry and to provide geological and hydrogeological data in the upper part of the basin;
- Borehole geophysical logging in CV-1 completed by Pure Energy in late 2014 to better profile brine-bearing zones in the borehole;
- Reaming and widening of CV-1 by Pure Energy to allow installation of a quasi-production well to allow pumping tests to be performed;
- Seismic Reflection Survey of the entire Property by Pure Energy to help define location and extent of bounding and in-basin faults, identify depth to bedrock and identify and trace key stratigraphic horizons laterally and vertically throughout the basin;
- Pumping Tests performed in CV-1 by Pure Energy;
- Soil and groundwater geochemical sampling from all phases of intrusive exploration.

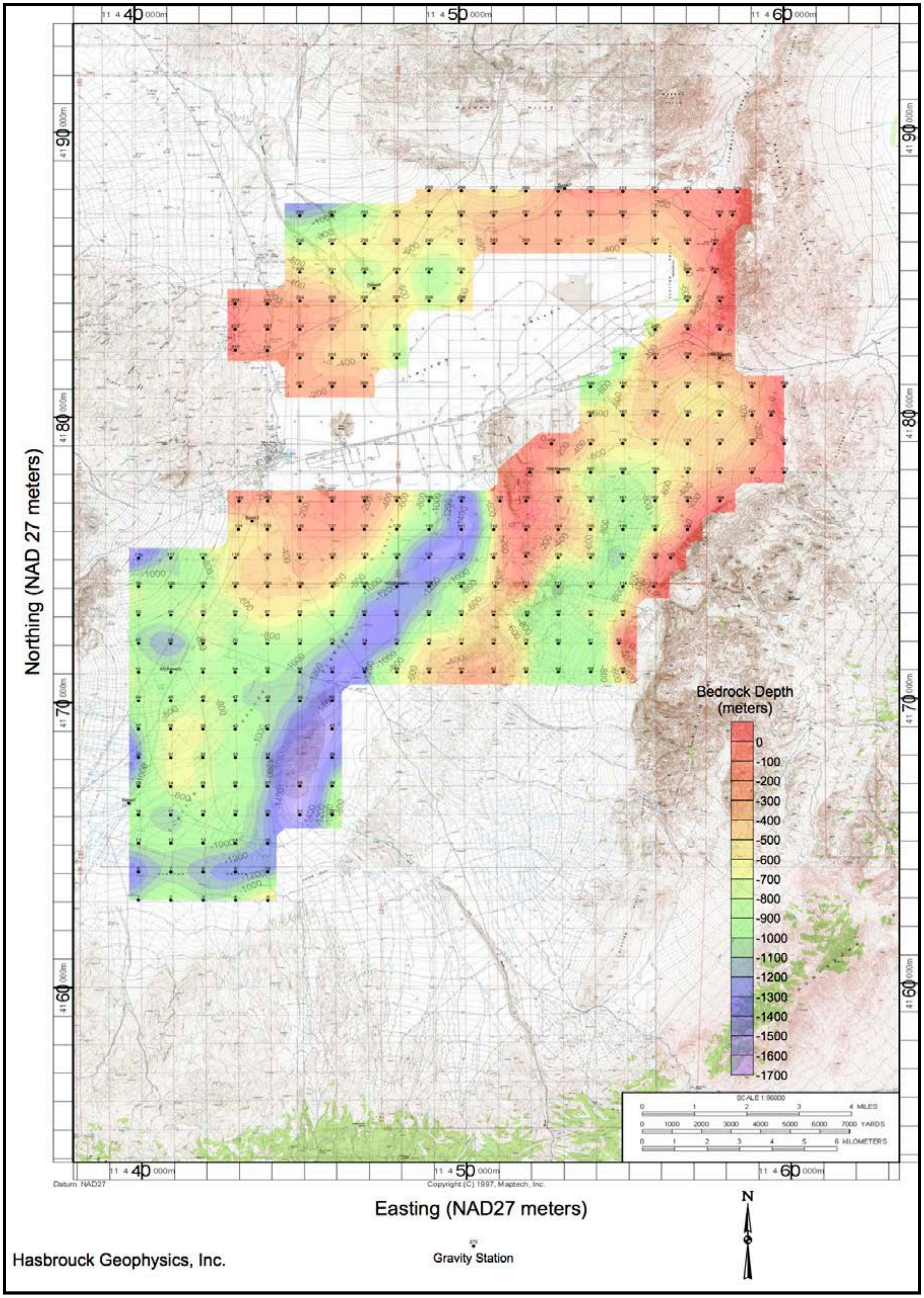
Summaries of the results from this work are provided below and in Sections 10 and 11. Potential future exploration work is described in Section 26.

9.1 Geophysics

9.1.1 Reconnaissance Gravity Survey

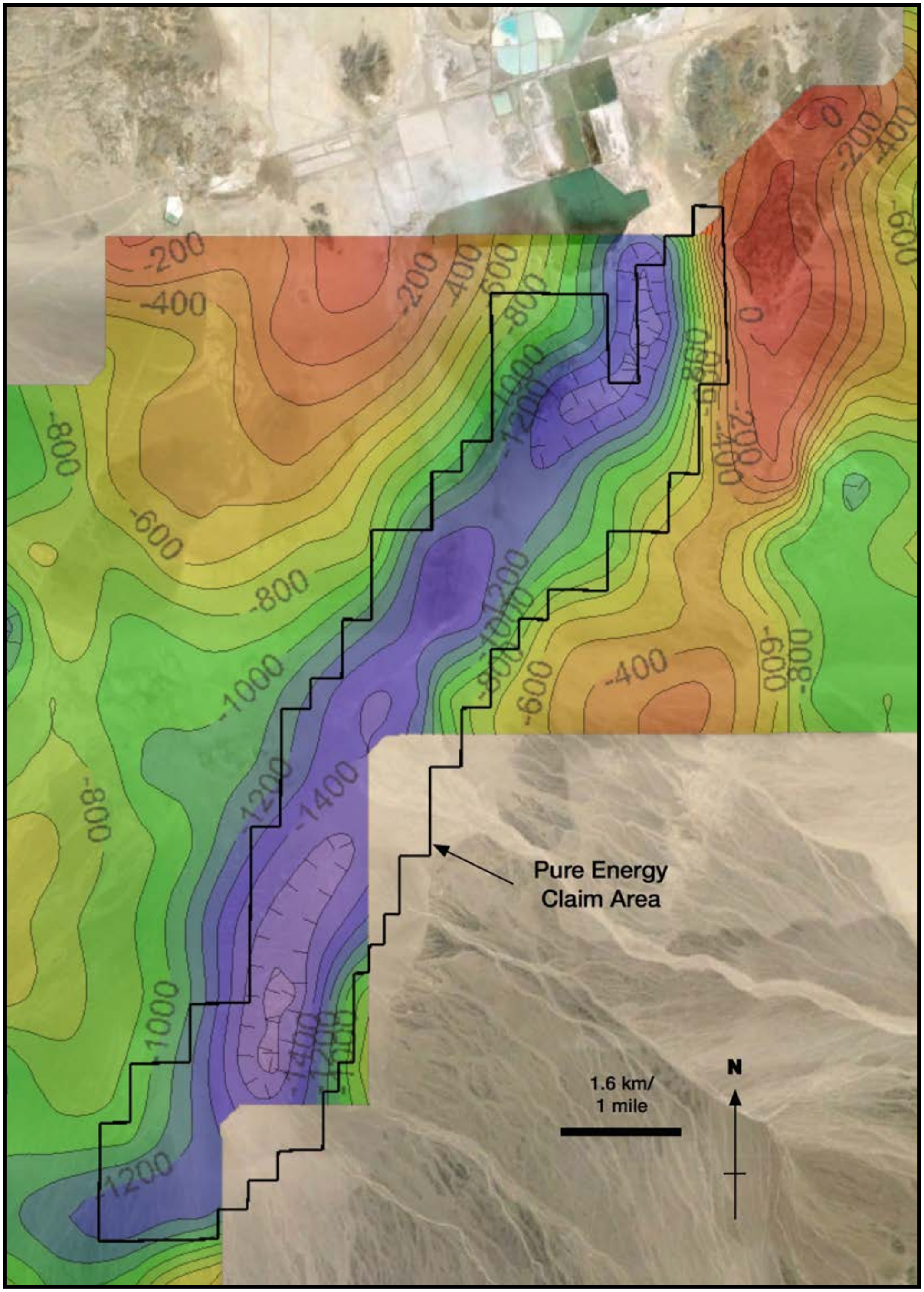
The reconnaissance level gravity survey was completed in 2009 by Hasbrouck Geophysics for Rodinia. The survey consisted of 274 points which were positioned to the north, east and south of the existing Albemarle (Rockwood at the time) operations. The survey identified a large, generally NE-SW trending basin, with a maximum depth of over 1,600 m (1 mi) that runs southwest for approximately 15 km ((9.3mi) from the edge of the existing Albemarle operations. Based on the geometry of the basin infill, it appears that steeper structures, likely normal faults bound the basin on its eastern side. The general results from this survey are presented in Figure 9 below.

Figure 9: Map of Depth to Bedrock (Hasbrouck, 2009, Fig.4)



The location of Pure Energy's claim area in relation to the identified basin is shown in Figure 10 below.

Figure 10: Location of Pure Energy's Claim Area Relative to Basin

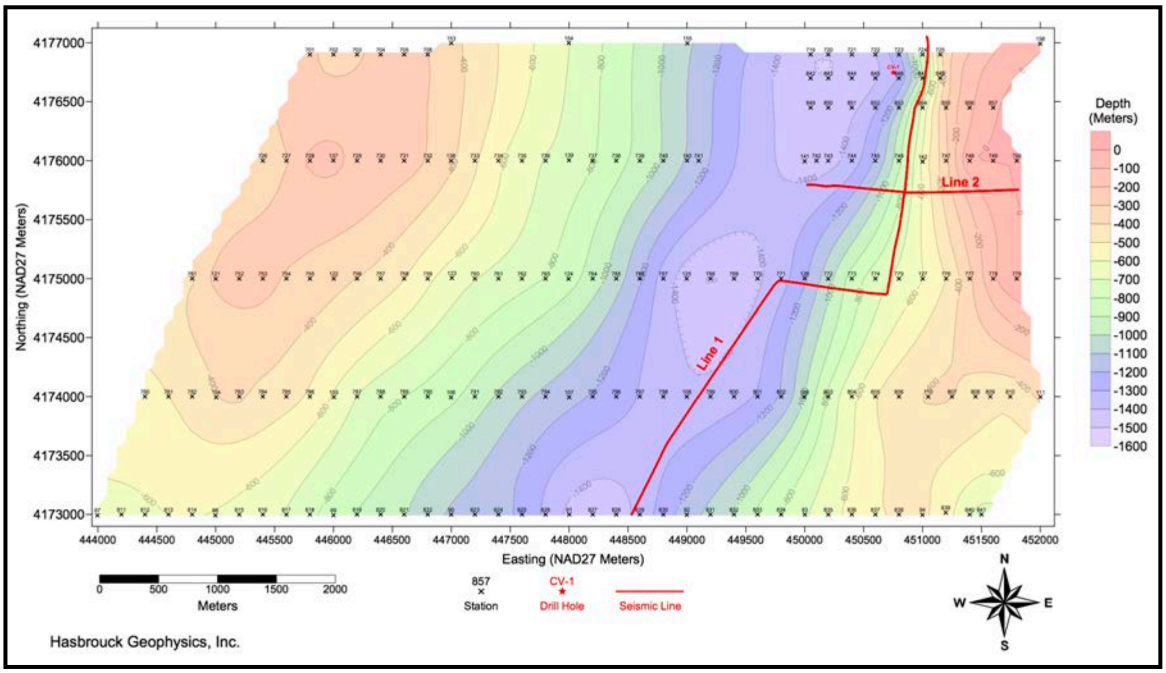


Note: Imagery from GoogleEarth. Claim area from BLM PLSS database. Depth to bedrock contours in meters.

9.1.2 Detailed Gravity Survey

Pure Energy contracted Hasbrouck Geophysics to conduct a detailed gravity survey on the northern part of the Clayton Valley South claims in December, 2014. The purposes of the survey were to expand upon the original Rodinia 2009 reconnaissance-level gravity survey to improve delineation of the basal feature that trends south-southwest from drill hole CV-1, map depth to bedrock, or thickness of sediments and map geologic structures such as basin-bounding faults that may influence aquifers containing lithium. A LaCoste and Romberg Model G gravity meter (serial number 546) was used to acquire the data. A total of 146 new gravity stations (numbered 701 to 857) were acquired along seven lines at nominal station spacing of 200 m (656 ft) and line spacing of 1 km (0.6 mi) (Hasbrouck, 2015a). Results are shown in Figure 11.

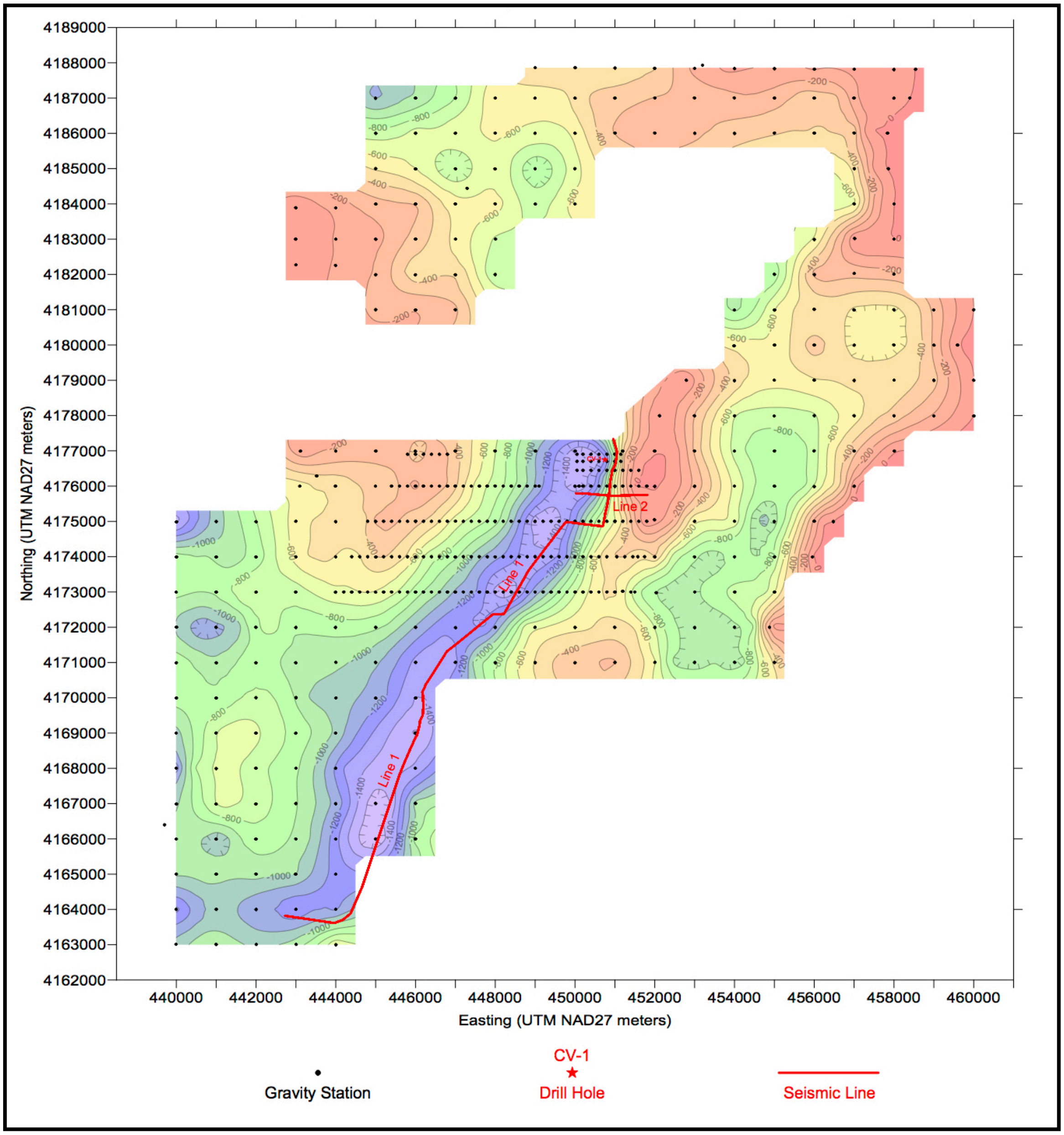
Figure 11: Map of Depth to Bedrock (Hasbrouck, 2015a, Fig.3)



Note: Seismic Line location added after gravity survey completed for clarity

Subsequently, the data from the detailed gravity survey were incorporated with the data from the 2009 study, and an integrated depth to bedrock map was produced as shown in Figure 12 below. Note that the line of the later seismic survey has been included for information purposes.

Figure 12: Integrated Map of Depth to Bedrock (Hasbrouck, 2009 & 2015a)



Note: Seismic Line location added after gravity surveys completed for information. North is up. Contours showing depth to bedrock are in meters.

It can be seen from Figure 12 that the gravity low, interpreted to be an infilled basin, is elongate and that the eastern boundary of the basin is steeper than that of the western edge. This may be due to steeper or more pronounced normal faulting along the eastern edge, and/or the presence of more complex faulting along the western edge of the graben. As the presence, location and orientation of the faults is likely an important factor in controlling the lateral extent of lithium bearing brines, it was decided that conducting seismic reflection work to better define the faults would be warranted. This work is described in more detail in Section 9.1.4.

9.1.3 Downhole Geophysics

Following drilling of CV-1 (see Section 10 below), downhole geophysics was used to better understand the location of brine-bearing horizons in the borehole. This work was performed by Southwest Exploration Services LLC and utilised a truck-mounted cable tool probe system that was run down into the 10 cm (4 in.) PVC well casing present in CV-1 at the time of the survey (this well was subsequently redrilled for the purposes of conducting pumping tests). Two main probes were used for the survey, the first measured fluid temperature, fluid conductivity and natural gamma; the second measured induced resistivity and induction in the surrounding formation. The data were used to help design the pumping well that was to be installed in the redrilled borehole and are provided in Appendix 4.

The data show very clearly the increase in fluid conductivity at approximately 166 m (546 ft) below ground level (bgl) that represents the brine present within the borehole, and that fluid conductivity continues to increase to the base of the hole (base of the hole at approximately 235 m (770 ft) bgl at the time of the survey, prior to redrilling, due to sedimentation/hole collapse). Consistent with the increase in fluid conductivity is an increase in induction, most likely representing brine in the surrounding geological formations, though this increase in formation induction begins at approximately 143 m (470 ft) bgl. The mismatch between the two was likely caused by the static column of freshwater sitting above the brine layer in the borehole (static water level in the borehole was approximately 13.7 m (45 ft) bgl at time of survey), meaning that the freshwater/brine interface was depressed in the standing column of water within the 10 cm (4 in.) well casing.

The 'sawtooth' increase and decrease in induction below 143 m (470 ft) bgl represents the interbedded nature of the formations below that depth (variations in grain size and porosity etc. over relatively short distances). The decrease in formation resistivity below approximately 116 m (380 ft) bgl likely shows the influence of fresher, less conductive groundwater present in the formations between 116 m (380 ft) and 143 m (470 ft) bgl. The gamma data show the presence of several key clay-rich layers present throughout the various formations. Key clay rich layers at 117 m (385 ft), 122 m (400 ft), 139 m (456 ft) and 152 m (498 ft) bgl may have a role in separating the upper perched groundwater from the brine bearing formations below. Fluid temperatures in the borehole increased in a gentle flattening curve to a depth of approximately 91 m (300 ft) bgl, at which point they increased in a broadly linear manner to the base of the hole (brine temperature of approximately 23°C at the base of the hole).

9.1.4 Seismic Reflection Survey

Pure Energy contracted Hasbrouck Geophysics, Inc. (2015b) to conduct a seismic reflection survey on its claims in southern Clayton Valley with the goals of better defining the basin shape, stratigraphic dip, continuity and extent of aquifers units, aquifer and bedrock structure and possibly provide gravity modeling constraints. A total of 19.9 km (12.4 mi) of seismic reflection data along 2 lines (Figure 12) were acquired by Bird Seismic Services, Inc. with design and field supervision by James Hasbrouck. A Seistronix EX-6 signal-enhancement seismograph configured with 600 live channels was used. A United Service Alliance AF-450 source, with a 208 kg (458 lb) nitrogen-accelerated weight mounted on an 8-ton truck, was used along both lines (Figure 13). After initial field-testing, data for each source point were stacked 4 times. Each geophone location and elevation was surveyed by Matrix Surveys, Inc. using differential GPS to sub-centimeter horizontal and vertical accuracy. The geophones were buried 5-10 cm (2-4 in) and covered with dirt to minimize background ‘noise’. Noise encountered during data collection was eliminated during post-collection processing. Hasbrouck noted that the tracing of reflectors in high resolution data is a ‘combination of art and science’, i.e. reflectors may be interpreted differently along certain sections of lines but the general nature of the subsurface interpretation will not change.

Figure 13: Photograph of Source Used for Seismic Reflection Survey

The seismic data identified numerous stratigraphic reflectors due to the extremely high resolution. A total of 20 reflectors (R1 to R19), including Paleozoic bedrock, were delineated based on data consistency and strength. The CV-2 lithologic log was used by Hasbrouck for comparison with the reflectors, and generally, strong correlation was found (Table 8).

Table 8: Reflector Estimated Depths and Drill Log Notes (modified from Hasbrouck, 2015, Table 2)

Reflector	Depth + 15% ft (m)bgl	Lithologic Log Notes	
		CV-2	SPD-9
R1	Not Present		
R2	78.4 (23.9)	Lithic Tuff	Fine-medium grained sand and gravel
R3	151.3 (46.1)	Lithic Tuff with silty clay interbeds	Fine-medium grained mixed gravels with minor clay and fine sand
R4	262.5 (80.0)	Coarse rock 260-300 ft	Fine-medium grained mixed gravel
R5	361.8 (110.3)	Interbedded coarse gravel, coarse sand and silt	Fine-coarse grained gravels, boulders
R6	486.6 (148.3)	Change to clay with lithic tuff, silty sand	Fine grained gravel
R7	591.6 (180.3)	Interbedded silty clay and clay with fine gravels. White ash noted; water flow increase 573-580 ft	Primarily dense green clay and interbedded sand. Li 71 - 190 ppm between 460-560 ft.
R8	678.0 (206.6)	Typically 30% clay, 60% silty clay, 5-10% medium -fine grained sand, ash beds	Dense green clay and sand. Li 320 - 400ppm between 560-660 ft.
R9	822.4 (250.7)	Typically 30% clay, 60% silty clay, 5-10% medium -fine grained sand, ash beds	Dense gray clay with medium gravels. Li 200-280 ppm between 660-1120 ft.
R10	987.7 (301.0)	Hole terminated - heavy clay	Dense gray clay with interbedded sand
R11	1231.9 (375.5)		Dense brown-gray clay with interbedded sand. Li 120-160ppm between 1120-1620ft.
R12	1355.9 (413.3)		Dense gray clay with interbedded sand
R13	1458.3(444.5)		Dense gray clay with interbedded sand
R14	1658.5 (505.5)		TD 1620
R15	1877.2 (572.1)		
R16	2028.7 (618.3))		
R17	2331.3 (710.5		
R18	Not Present		
R19	Not Present		
Pz	3283.7 (1000.8)		

Note: The SPD-9 logged notes were added by the Report's author.

To Summarize:

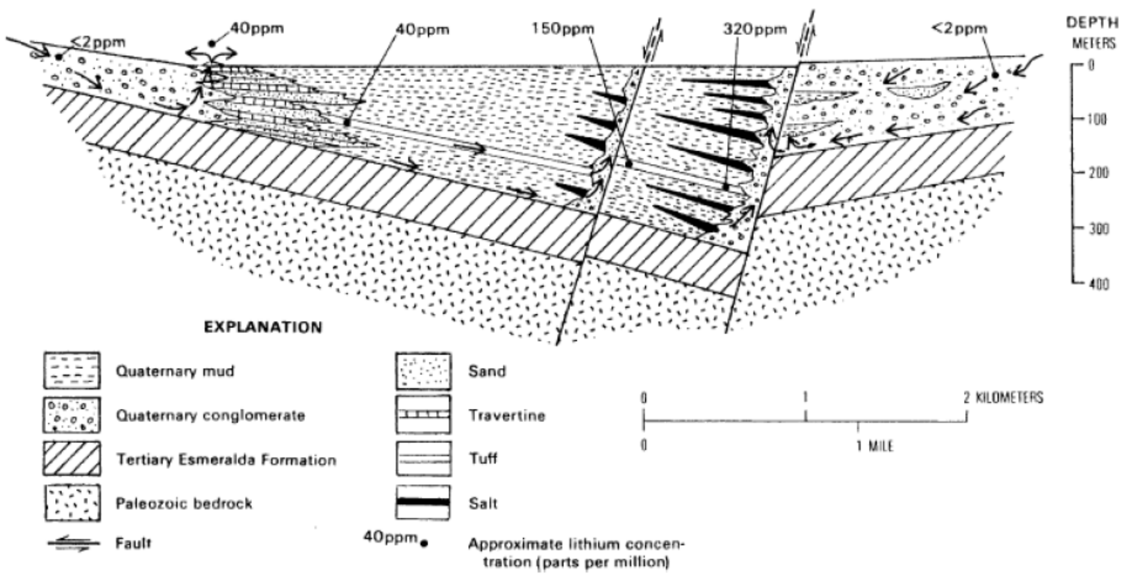
- Reflector R2 at a depth of 24 m (78 ft) is weak to moderate at may represent the CV-2 slightly denser lithic tuff.
- R3 is a moderate response (slightly greater than R2) related to silty clay beds between 43-52 m (140-170 ft).
- R4 is a strong reflector throughout most of the survey area and corresponds to the coarse rock logged in CV-2 at 80m (262 ft).
- R5, at 110 m (362 ft), is also prominent throughout much of the survey and corresponds with coarse gravels, sand and silt.
- R6, at 155 m (509 ft), corresponds in CV-2 to a noted lithologic change to clay, with lithic tuff and silty clay above. SPD-8, along seismic line 1c, nearly a mile southwest of CV-2, shows interbedded tuff and clay at the R6 depth.
- R7, at 180m (592 ft), may be the top of a Li brine zone similar to one or more mapped Li units of the Esmeralda Formation. SPD-9 brine samples between 140-170 m (460-560 ft) contained 71-190 ppm Li.
- R8 (207 m/678 ft) and R9 (251 m/ 822 ft) are moderately strong throughout the survey and are within the CV-2 Li brine zone. The highest SPD-9 Li concentrations, 420 – 400 ppm, were found within the 170-201 m (560 – 660 ft)

interval. SPD-9 Li values between 200 to 280 ppm were consistently measured throughout the 201-341 m (660 – 1120 ft) interval.

- R10 is generally strong and indicative of clay. CV-2 terminated at 293 m (960 ft) in heavy clay.
- R11 (375.5 m/1232 ft), R12 (413.3 m/1356 ft) and R13 (444.5 m/1458 ft) are found in SPD-9 in zones logged as dense gray clay and interbedded sand 341-494m (1120-1620 ft). Li concentrations ranged from 120-160 ppm. The remaining reflectors, R14 to Paleozoic basement were not intercepted by Rodinia or Pure Energy boreholes.

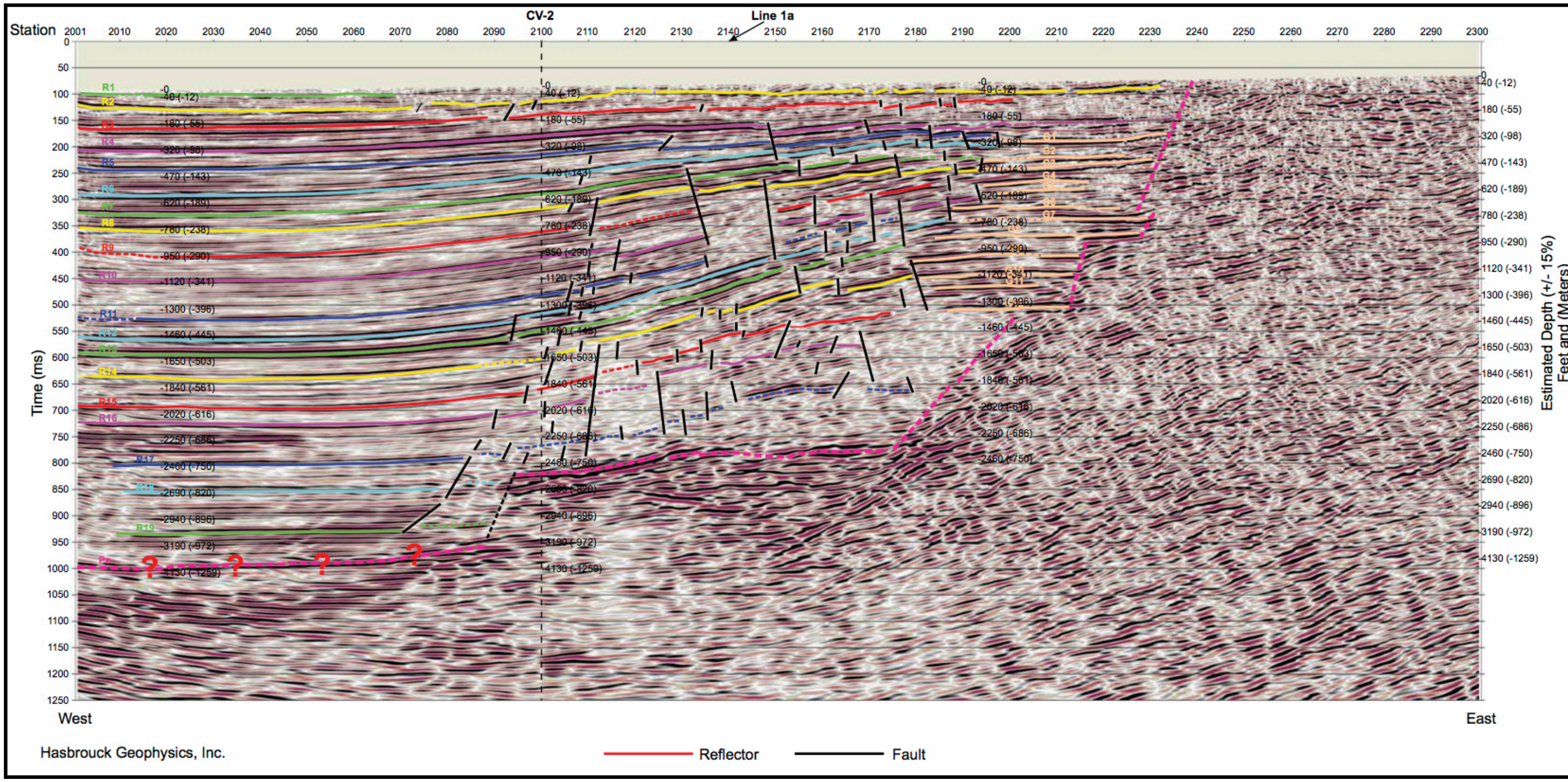
The seismic data also show a series of intra-basin faults east of CV-2 (Figure 15). Hasbrouck (2015) interpreted these faults as representative of a major fault, possibly the Paymaster Fault. Similar intra-basin faults were proposed as traps and conduits for brine movement and enrichment of lithium (Figure 14).

Figure 14: Clayton Valley Idealized Section (Davis et al, 1986, Figure 1.4).



Interpretations of the depositional environments along Line 2 (across dip) and Line 1C (along strike) are shown in Figures 16 and 17 (provided by Pure Energy and approved by Hasbrouck).

Figure 15: Clayton Valley Seismic Reflection Line 2 (Hasbrouck, 2015b; Figure 4)



Note: Section is looking northwards. West (left) to East (right). (See Figure 12 for location).

Figure 16: Summary of Seismic Reflection Line 1C

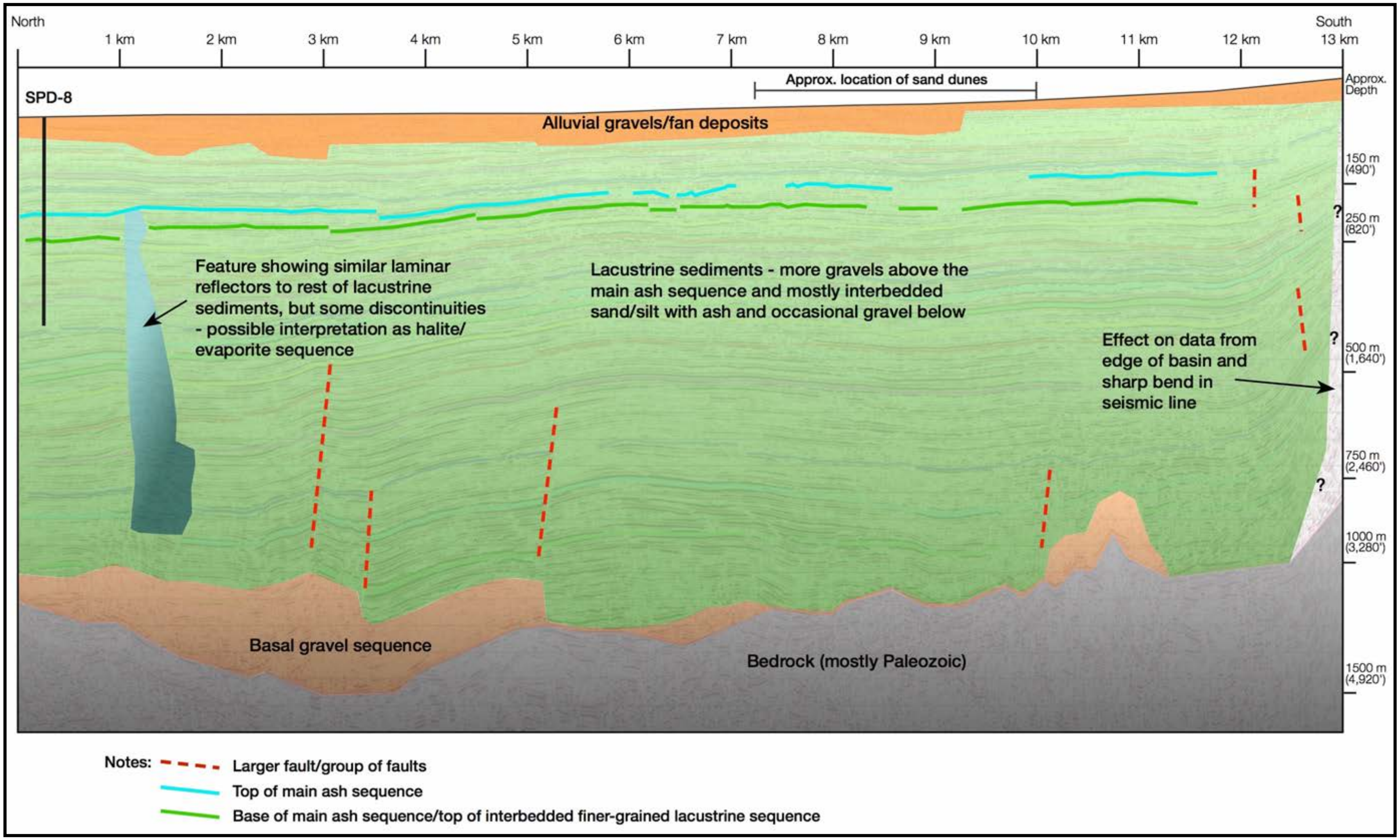
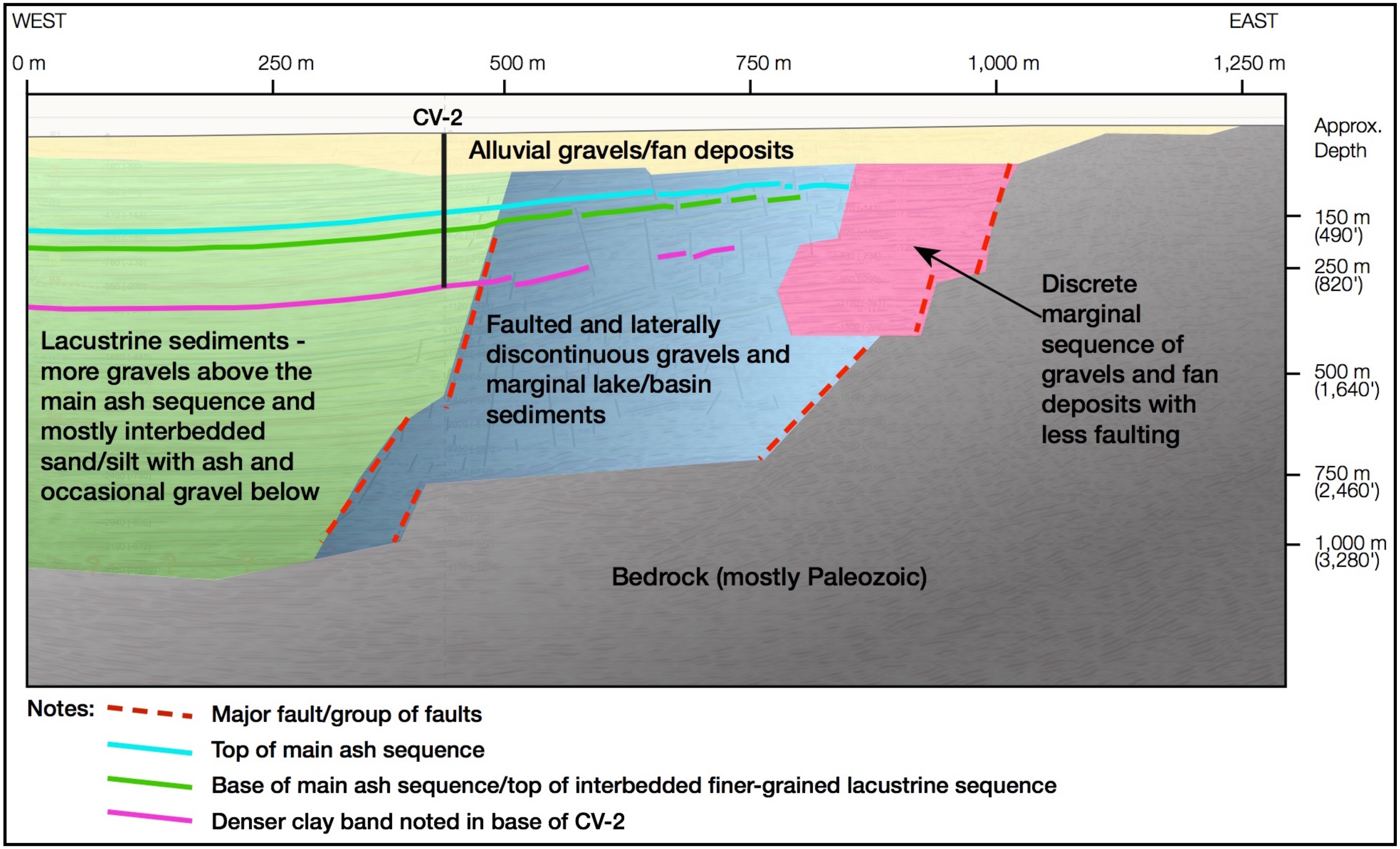


Figure 17: Summary of Seismic Reflection Line 2



9.2 Hydrogeology

Direct observation of groundwater has been possible only in the four boreholes drilled to date on Pure Energy's property. In general terms, groundwater encountered is of two forms, either perched freshwater with low conductivity and TDS, or high conductivity brines generally encountered below approximately 122-152 m (400-500 ft) bgl.

Drilling work performed by Rodinia in SPD-8 and SPD-9 was most useful in determining the depth to first water, as the reverse circulation drilling technique did not introduce any additional fluids into the aquifer materials (see Section 10 for more information on drilling techniques used).

Data from these two boreholes showed that water was first encountered at approximately 36-52 m (120 to 170 ft) bgl. The water encountered had relatively low conductivity and a specific gravity of 1.0, and this freshwater zone extended to a depth of approximately 110-122 m (360-400 ft) bgl. Air-lift data gathered from this zone show that rates vary between 3–100 gpm, suggesting a high degree of variability in hydraulic conductivities. In certain zones, particularly the upper half of this unit, the flow is noted to stop after a short period, or is described as muddy, suggesting that the aquifer is not extensive or laterally continuous in all directions. This observation is consistent with the water above approximately 122 m (400ft) bgl being present within alluvial fan deposits, and as such, some lateral and vertical heterogeneity would be expected. This upper unit of predominantly fresh groundwater is considered to be unconfined (based on water level observations), with many perched, laterally discontinuous horizons in the upper half where clay-rich, finer grained partings in the alluvial beds cause local perching.

It is likely that this upper, occasionally perched, fresh groundwater unit is similar to the freshwater aquifers that are present in the alluvial fan units that surround the playa floor in the entire valley, and are locally utilised by relatively shallow wells to provide water for livestock and for drinking water purposes. It is likely that the thickness of this saturated zone will change with periodic rainfall, recharge etc.

Below 110-122 m (360-400 ft) bgl groundwater chemistry changes and shows evidence of some mixing with the underlying brines (increase in conductivity and specific gravity). Drilling logs indicate that this is occasionally indicated by changes in water colour. This zone extends to a depth of approximately 140-171 m (460-560 ft) bgl and is broadly coincident with a sequence of interbedded alluvial sediments with a greater fraction of clays and occasional tuff/ash beds. Air-lift rates show a wide range from 5.5 to 120 gpm, demonstrating the variable nature of the sediments in this zone. It is likely that the more clay-rich zones act to reduce overall vertical flow and limit the interaction between the underlying brine aquifers with the overlying freshwater aquifer.

Transition into the main brine unit is observed as a sharp increase in conductivity and specific gravity, typically below a depth of 140-171 m (460- 560 ft) bgl. This transition is coincident with a sequence of ash and tuff layers interbedded with other alluvial and lacustrine sediments, typically approximately 30 m (100 ft) thick. Below this, the sediments grade into a very thick sequence of lacustrine materials (silts, fine sands and clays, with ash and gravel layers). Water level data from wells installed in this main brine unit (and hydraulically isolated from the upper freshwater aquifer) suggest that it is confined relative to the upper freshwater aquifer, as static water levels are typically 12-18 m (40-60 ft) bgl. No base to the main brine unit has been identified through drilling. Flow rates from air-lift tests are relatively consistent throughout the main brine bearing zone and vary from approximately 3.1-9.5 L/min (50-150 gpm).

It is most likely that the upper sequence of interbedded ashes and tuffs is consistent with the Main Ash Aquifer identified beneath the adjacent Albemarle production property (Zampirro, 2004). It therefore follows that the underlying lacustrine sequence is consistent with the Lower Aquifer System also identified beneath the adjacent Albemarle property (Zampirro, 2004). It is understood that both of these aquifers are used for lithium brine production from the adjacent property.

It is possible that the Main Ash Aquifer and the Lower Aquifer System are hydrogeologically distinct, but this has not been tested to date (although a clay layer has been noted between the two in some boreholes). The quasi-production well installed in CV-1 was designed such that this may be determined in the future if packing devices are used to isolate the two screened horizons in this well.

Some variation has been noted in boreholes CV-2 and SPD-8, where freshwater is present just below the Main Ash Aquifer. It is most likely that this results from the interaction between faults forming the eastern edge of the basin and marginal gravel lenses that allow freshwater to deeper penetrate the main brine aquifers along the margins of the basin.

9.2.1 Pumping Tests

Air-lift tests performed during DWRC drilling can be used to provide qualitative assessment of variations in hydraulic conductivity of the various formations encountered during drilling, but only correctly designed pumping tests performed in properly constructed wells can provide robust estimates of key hydraulic parameters.

Borehole CV-1 was redrilled in early 2015 (see Section 10 below) to allow installation of a 203 mm (8 in) well screen. A summary of the screen position relative to the main geological units is shown in Figure 20 below. The well screen was comprised of 203 mm (8 in) I.D. stainless steel wire-wrapped screen with an opening aperture of 1 mm (0.04 in) and #6 washed gravel was used as the filter pack. The blank well zones were constructed from 203 mm (8 in) I.D. low-carbon steel, and all well pipes were welded together in-situ. High-strength, quick-setting cement with improved salt tolerance was used to hydraulically isolate the screened sections and to prevent shallow perched groundwater from entering the screened zones.

Following well installation, a nominal 152 mm (6 in) diameter Grundfos NP6 25 HP electric submersible pump was installed at a depth of 152 m (500 ft) bgl, with 76 mm (3 in) I.D. steel riser pipe and non-return valves. Flow at surface was directed via 76 mm (3 in) steel pipe and was measured in-situ using a calibrated ultrasound flow meter. The discharge flow rate from the pump was controlled using a variable frequency drive to control the running speed (rpm) of the pump. Water discharged from the well was pumped to a water truck and spread on local roads to minimise dust.

Single-well pumping tests were designed by BGC Engineering, and water-level data during tests and recovery were collected by hydrogeologists from Broadbent and Associates Inc. A short summary of the tests conducted and main interpretation is provided in Appendix 6. No packers were used in the pumping tests, and hence, the data obtained represent a result averaged over the whole screened interval.

The step-test was used to determine a suitable pumping rate at which to conduct the main long-duration constant-rate pumping test. A rate of 9.5 L/sec (150 gpm) was chosen based on the potential output from the pump and the relative drawdown vs. discharge rate data gathered during the step-test. Discharge rate during the constant-discharge test was kept constant by adjusting the pump speed as drawdown increased during the early part of the test.

Analysis of the pumping test data showed that, with a wide range of models used to interpret the discharge and drawdown data, that the quasi-production well CV-1 displayed a transmissivity of between 1.7×10^{-4} and 4.6×10^{-4} m^2/s, which is low for a clean sand and gravel aquifer, but more typical of a finer grained aquifer, as observed beneath Clayton Valley. Long-term sustainable pumping rates from the quasi-production well are estimated as 6 L/sec (100 gpm) using the lowest estimates for transmissivity, but may potentially be higher if the well were widened to a true pumping well size (e.g. 25.4-30.5 cm/10-12 in I.D. casing), or the depth were increased. This estimate is in line with anecdotal evidence that suggests that production wells on the adjacent Albemarle operation are run at 3-16 L/sec (50 – 250 gpm) from the various aquifers.

The data were also compared to a range of similar hydrogeological studies performed in nearby basins, infilled with a similar range of sediments. Estimates of porosity and grain size from samples from CV-2 were in-line with observations made elsewhere (measured porosity of 34% from representative sample from CV-2). Additional porosity measurements should be made as more data are gathered from the Clayton Valley South claims. These estimates of porosity can be gathered directly from disturbed or preferably undisturbed samples, from downhole geophysics, or from pumping tests using a nearby well to monitor drawdown.

10 DRILLING

Rodinia Lithium drilled 9 boreholes along the north, east and southern patented Albemarle claims boundary. As described in Section 5.2, two of the holes, SPD-8 and SPD-9, intersected high Li values in subsurface brines. Both of these holes were located in the south Clayton Valley and now are on Pure Energy claims. The boreholes were drilled by the DWRC method and until ground conditions prevented further advancement. Tricone drill bits were used initially to drill a 254 mm (10 in) diameter hole in which to place casing. The casing was installed to variable depths to stabilize the upper section of each hole and to prevent compressed air blowouts around the casing. Drilling muds and paper products were used to stabilize the hole.

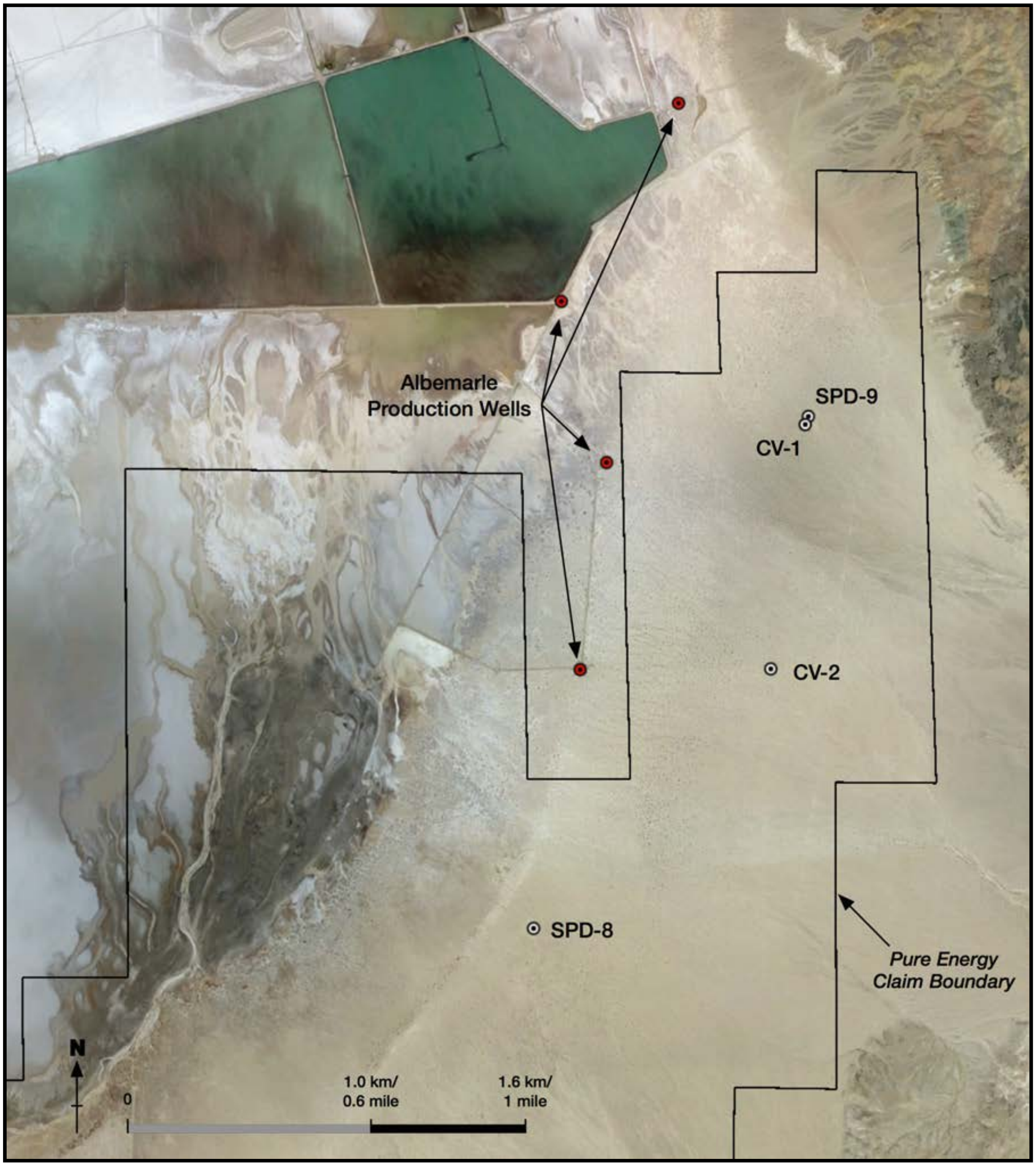
Once casing was installed, 152 mm (6 in) dual wall pipe with an open face drag bit were used to drill and samples cuttings and water samples. Drill bit plugging was a common occurrence when coarse gravel, hard clays and fine flowing sand were encountered.

Pure Energy commenced exploration drilling at the Property in September 2014 at borehole CV-1. This well location was chosen to allow the data gathered to be easily correlated with SPD-9. The borehole was drilled by Harris Exploration Drilling in September 2014. The borehole was drilled using DWRC techniques to approximately 104 m (340 ft) bgl, using a 140 mm drill bit. At this depth, instability in the open hole necessitated switching to rotary mud drilling to complete the borehole (T.D. 274 m/900 ft.). The drilling from 104 m to 274 m was completed using a 140 mm diameter tri-cone bit with drinking water and bentonite mud additives (small amounts of polymer were added to the mud to help stabilise the borehole walls). After reaching T.D., the well was flushed with air and a 102 mm (4 in) PVC well pipe was placed in the open borehole without any filter pack or seals, and some initial brine samples were taken using a 76 mm (3 in) electric submersible pump placed at a depth of approximately 213 m (700 ft). Additional information relating to the first phase of drilling in CV-1 are described in more detail in the most recent Technical Report for the property (Feyeraband, 2014; see February 5, 2015 filing at Sedar filings for Pure Energy Minerals Ltd). The locations of the wells are shown in Figure 18 below and are provided in Table 9, and the lithological information gathered is summarised in Figure 20 below.

Table 9: Borehole Locations and Information

Hole #	BLM Hole #	Latitude	Longitude	Total Depth
SPD-8	SPD-25	37°43'13.14inN	117°34'20.33"W	1,280 ft 390 m
SPD-9	SPD-24	37°44'19.17"N	117°33'35.68"W	1,620 ft 494 m
CV-1	CV-1	37°44'18.12"N	117°33'36.19"W	900 ft 274 m
CV-2	CV-3	37°43'46.63"N	117°33'41.74"W	970 ft 296 m

Figure 18: Location Map of Clayton Valley South Boreholes

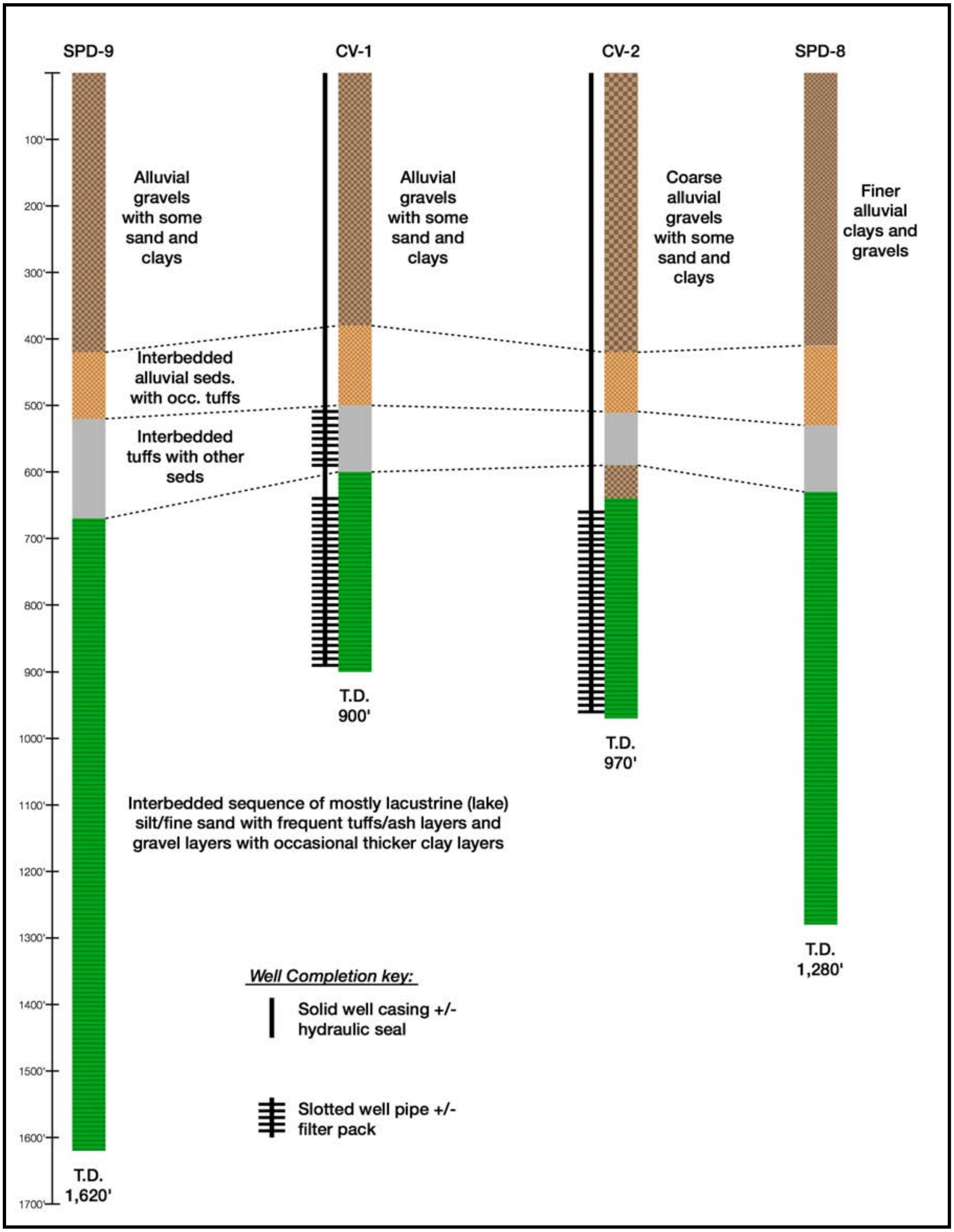


Note: Albemarle production wells located using imagery (and pers. comm. Prof. LA Munk). Base image provided by GoogleEarth.

Following downhole geophysics work in CV-1 (see Section 9.1.3), the borehole was reamed to a nominal diameter of 35.5 cm (14 in) using a two-stage tri-cone bit (see Figure 19) and mud-rotary techniques. This work was performed by Harris Exploration Drilling in February 2015.

Figure 19: Tri-Cone Reaming Bit

Figure 20: Summary of Borehole Data and Main Formations



Note: Depth scale in feet. CV-1 has gravel filter pack next to screened zone and full hydraulic cement seals elsewhere. CV-2 has no filter pack or seals.

Following reaming to 35.5 cm (14 in) diameter and to 274 m (900 ft), a 203 mm (8 in.) steel quasi-production well was installed into the borehole, as described in Section 9.2.1.

The diameter of the wellpipe was chosen to allow installation of a sufficiently powerful electric submersible pump so that the aquifer could be adequately stressed during testing. The reaming diameter was chosen to allow sufficient annulus between the wellpipe and the borehole walls so that filter pack and cement seals could be installed without unnecessarily high risk of bridging.

Borehole CV-2 was drilled by Harris Exploration Drilling in March and April 2015 (note that this borehole was also called CV-3 in some notes/samples as this was the name used on the BLM Notice of Intent paperwork). Using information from adjacent holes, the borehole was drilled using 15.25 cm (6 in) diameter mud-rotary drilling to a depth of 122 m (400 ft) bgl and cased with 15.25 cm (6 in) blank mild-steel casing. The intent of this casing was to prevent blow-outs/short-circuits to surface when using DWRC drilling, as had been previously incurred during the initial drilling of CV-1.

DWRC drilling using a modified drag-bit was used from 122-152 m (400-500 ft) bgl (similar to that used successfully by Rodinia previously; see Figure 13), and was then switched to a tri-cone DWRC bit with skirt due to plugging with pieces of lithic tuff gravel. This modified tri-cone bit was used in DWRC mode to 182 m (598 ft) bgl, at which point all returns and air flush were lost and some air return to surface at distance from the well was noted (i.e. short-circuit). Drilling using the same tri-cone bit was resumed in mud-rotary mode to 182 m (625 ft) bgl, where it was attempted to revert to RC drilling. This was unsuccessful, as no returns were made, and mud-rotary drilling using the same bit was used to the base of the borehole at total depth of 296 m (970 ft). Additives used during drilling consisted of drinking water, bentonite mud and some occasional polymer to help maintain borehole wall stability. Due to the saline conditions, it was noted by the drillers that the bentonite mud broke-down very quickly below approximately 213 m (700 ft) bgl and greater than usual quantities of bentonite were used.

Figure 21: Modified Drag-Bit

The drill string was then removed and 7.5 cm (3 in) I.D. PVC well screen was installed, with slotted section from 204-296 m (670-970 ft) bgl and solid pipe to surface. No filter pack or hydraulic seals were used in the installation. The well was then developed by air-lifting for approximately 9 hrs using 2.54 cm (1 in) I.D. steel pipe inside the PVC pipe.

A summary of the lithologies encountered and well installation is provided in Figure 12, and the detailed drilling log is provided in Appendix 7.

DWRC drilling is the preferred method for drilling and sampling these deeper brine formations (sonic drilling would be best, but the deposits in Clayton Valley are too deep for using sonic), as it allows for better sample collection during drilling. However, it is not always possible to drill DWRC in the loose, clastic sediments encountered beneath Clayton Valley, as high levels of porosity, combined with low levels of cementation mean that air flush can be lost to the surrounding formation, and that groundwater and suspended sand/silt enter the drill rods and cause plugging of the drill string. This can then lead to jamming of the bit and associated problems. Rotary-mud drilling is an acceptable substitute where borehole advancement is paramount, but does result in lower quality geological and hydrogeological information. However, this can be mitigated by using additional techniques to gather supplemental data (e.g. downhole geophysics, low-flow/'coring' water sampling, pumping tests etc.).

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Sampling Methodology

11.1.1 Previous Sampling methodology at Clayton Valley

Rodinia used a rigidly enforced sampling program to ensure sample integrity (Keast, 2011). Drilling fluids and water were used to stabilize the hole until groundwater was encountered. Drill additives did not contain Li or other salts that could contaminate samples. The drill water was purchased from Silver Peak's potable water wells. Each truck load was sampled, analyzed and found to be free of Li.

Bulk sediment samples and chip samples were collected every 1.5 m (5 ft) as drill cuttings passed through a cyclone. Detailed notes were taken during the sample interval as to changes in composition.

Groundwater samples were collected at the end of each 6 m (20 ft), or when lithology changed, by the following method. The completed rod was raised 0.6 m (2 ft) off the borehole base and air was circulated for 5 to 10 minutes to remove any residual fluids or sediment from the rod and to allow the flow to clear up. A 19 L (5 gal) plastic bucket was inserted under the cyclone flow and fill time was recorded. Temperature was taken immediately. The bucket sample was allowed to settle, if necessary, before measurements of conductivity, total suspended solids, pH and specific gravity were taken by hand-held instruments.

Duplicate water samples were taken in triple-rinsed plastic bottles filled to the top by dipping into the bucket, and sealed with tamper-proof caps. The geologist stored the samples in his room until they could be shipped to the laboratory.

11.1.2 Pure Energy Minerals Ltd. Sampling Methodology

Sampling methods varied depending on the drilling method used, and the type of well installation.

When DWRC drilling was used, drill cuttings were assessed continuously by catching cyclone discharge in a washed sieve and assessing with a hand lens. At the same time, any variations in water discharge quantity or characteristics were noted. Sieve samples of each 6 m (20 ft) run (one drill rod length) were amalgamated and split and transferred both to chip trays and to clean laboratory-supplied sample jars for future analysis if required. Continuous sieve samples were laid out on a clean surface and logged immediately, and larger sample amounts, where required, were transferred to clean, sealable zip-lock bags. The sample technique used is conventional and acceptible practice.

At the end of each 6 m (20 ft) drill run, the bit was lifted for approximately 0.6-1 m (2 – 3 ft) and the hole was flushed for more than 5 minutes to allow the flush to reduce in sediment content. Towards the end of the 5 minutes, the flush was allowed to fill a graduated 57 L (15 gal) tub and timed so that air-lift discharge rate could be calculated. Following this, a water sample from the cyclone was caught in a clean 19 L (5 gal) bucket and allowed to settle for a few minutes. A water sample was then decanted from the bucket into rinsed water sample containers provided by the laboratory (acid preservatives were introduced into the bottles following rinsing). The water samples were then placed into a cooler containing ice and then stored securely with completed chain of custody paperwork. Water quality parameters were taken from the bucket after samples had been removed. Duplicate samples were taken where possible to provide additional QA/QC checks on the laboratory. The sample methodology used is conventional and acceptible practice.

During rotary-mud drilling, drill cuttings were assessed continuously by catching the mud-flush in a washed sieve, rinsing with clean water to remove drilling mud and assessing with a hand lens. As qualitative information from the driller is important during mud-rotary drilling, any observations regarding ‘bit-chatter’, change in torque or change in penetration rate were also noted. At the same time, any variations in mud discharge quantity or characteristics were noted (e.g. mud breaking down quicker than normal due to brine etc.). Washed sieve samples of each 6 m (20 ft) run were amalgamated and split and transferred both to chip trays and to clean laboratory-supplied sample jars for future analysis if required. Continuous sieve samples were laid out on a clean surface and logged immediately, and larger sample amounts, where required, were transferred to clean, sealable zip-lock bags. Water sampling during rotary-mud drilling is not possible due to effects from the drill water and mud introduced into the borehole during drilling.

Following well installation and prior to taking samples, the wells were developed for approximately 8-10 hrs. The development consisted of adding a small amount of surfactant (less than 5 L total) to the well to help break down drilling muds and air-lifting the fluids in the wellbore to surface. Rods were placed inside the wellpipe to a depth approximately at the top of the slotted section and water/brine was lifted from the wellpipe using air flush. Rods were then added as each flush interval cleaned up and no bentonite mud was being returned from each lifting stage. A small amount of surfactant was added periodically inside the drill string to aid development. The rods were added until the base of the well was reached and then typically left air-lifting for 3-4 hrs at that depth until the flush from the well was clear and showing no evidence of bentonite mud. Although available, no brushes or jetting tools were required to develop the wells. Following development, water samples were taken from CV-1 and CV-2 using a range of techniques that were utilized to give the highest quality samples.

Following the initial installation of CV-1 (i.e. 102 mm (4 in) PVC well resting in the borehole without hydraulic seals, filter pack etc.), the well was air-lifted to develop the various groundwater bearing formations and a 76 mm (3 in) electric submersible pump was installed in the well at a depth of approximately 216 m (710 ft) bgl. The relatively underpowered pump, plus a discharge pipe of 1in I.D. steel resulted in low discharge rates using this pump of approximately 0.2 L/s (3 gpm). This low-discharge rate means that, when the pump intake is in a screened zone, the volume of formation that is affected by the pumping will be relatively small (though contribution from areas with significantly higher hydraulic conductivity will still be possible), and in essence, the pump is sampling a limited part of the formation i.e. the pump is acting as a quasi low-flow sampling technique. This is evidenced by the very small amount of drawdown that was observed in the wellbore of CV-1 when this pump was used (typically less than 0.3 m (1 ft.) of drawdown during pumping for sampling purposes, as measured using a sounding tape). This technique was repeated in CV-1 with the pump intake at 177 m/580 ft) bgl.

During pumping, water quality measurements were taken at regular intervals until key parameters (temperature, conductivity, pH and dissolved oxygen) had stabilised. Once stable, water (brine) samples were discharged into pre-rinsed laboratory-supplied sample bottles, and laboratory-supplied preservatives were added after filling if required. Using this protocol, brine samples collected contained very low levels of suspended solids, even with no filter pack present in the borehole. The water samples were then placed into a cooler containing ice and stored securely with completed chain of custody paperwork. Duplicate samples were taken where possible to provide additional QA/QC checks on the laboratory.

Following reaming of CV-1 and installation of a quasi-production well, the hole was redeveloped using air-lift techniques for approximately 8 hrs. Following this, the 15.25 cm (6 in) 25HP pump was installed with intake at 152 m (500 ft) bgl and 7.5 cm (3 in) riser pipe. Pumping tests were conducted and water quality parameters from discharge water were monitored constantly throughout the tests. Several brine samples were taken during the constant duration pumping test by filling pre-rinsed laboratory-supplied sample bottles straight from the discharge pipe, and laboratory-supplied preservatives were added after filling if required. Using this protocol, brine samples collected contained very low levels of suspended solids, even with no filter pack present in the borehole. The water samples were then placed into a cooler containing ice and stored securely with completed chain of custody paperwork. Duplicate samples were taken where possible to provide additional QA/QC checks on the laboratory.

Using this technique of sampling at high flow rates (effectively production flow rates of 9.5 L/s, 150 gpm), from correctly installed pumping wells, it is likely that highly representative bulk samples, representing a large volume of the brine-saturated aquifer were gathered. Of all the sampling techniques, it is likely that this represents the best understanding of what bulk aquifer brine chemistry is, and is the most robust for assessing resource characteristics, as well as brine composition for future process testing. Owing to the construction of the well, it will be possible in the future to pump separately from either the Main Ash Aquifer or the Lower Aquifer System if packers are used to isolate the two sections of screen.

Following the initial installation of CV-2 (i.e. 7.5 cm/3 in) PVC well resting in the borehole without hydraulic seals, filter pack etc.), the well was air-lifted to develop the various groundwater bearing formations and water samples were taken from the air-lift water, by collecting air-lift discharge at the well collar in clean 19 L (5 gallon) buckets. The samples were then decanted into laboratory-supplied bottles as described above.

This coarse-scale blending of all formation waters, including the freshwater horizons (as no hydraulic seals are in place to isolate the brine-bearing zones) likely leads to diluted and non-representative samples, and initial analysis of samples taken this way suggests that they are somewhat diluted.

Following this, a form of water 'coring' was used to collect more representative samples from the brine column. A period of time was allowed following installation and well development, to allow water in the well column to reach equilibrium with formation water (over three weeks was allowed for this to occur). To take the brine samples, a technique called 'Hydrasleeve' was used. This entails lowering a collapsible bailer down through the static water column to the depth at which you which to sample, and then rapidly retrieving the bailer. This action causes the flexible bailer to open, fill (almost instantaneously), and then close again (due to a one-way reed valve), such that a discrete sample of water (a 'core') from a narrow depth interval (approximately 1.5 m/5ft) is brought to the surface with no additional contamination. In addition, several bailers can be deployed simultaneously at different intervals if required to get a depth concentration profile. Samples are taken from the shallower depths first, and then deeper samples later to avoid problems potentially caused by disturbing the water column due to turbulence effects. The technique is US EPA approved and additional details are available at http://hydrasleeve.com/studies.

Once the flexible bailers were retrieved, water (brine) samples were discharged into pre-rinsed laboratory-supplied sample bottles, and laboratory-supplied preservatives were added after filling if required. Using this protocol, brine samples collected contained very low levels of suspended solids, even with no filter pack present in the borehole. The water samples were then placed into a cooler containing ice and stored securely with completed chain of custody paperwork. Duplicate samples were taken where possible to provide additional QA/QC checks on the laboratory.

Using the drilling techniques that are practical in the loose clastic sediments of Clayton Valley, retrieving undisturbed soil core samples is not possible. In order to obtain estimates of porosity and check grain size estimates, disturbed samples were sent to a qualified laboratory for repacking to specified density estimates. These repacked samples were then tested for free-draining porosity.

11.2 Sample Preparation and Security

11.2.1 Rodinia Sample Preparation and Security

The brine samples were collected in duplicates by a company geologist and stored in tamper-proof plastic containers. Each sample set (laboratory plus retained duplicate) was labelled with a unique number. The samples were shipped by the company geologist via US Postal Service, with enclosed chain of custody document, to the ALS Laboratory Group Environmental Division located in Fort Collins, Colorado, USA. Keast (2011) found "no sample security factors that would materially impact the accuracy and reliability of the results."

11.2.2 Pure Energy Minerals Ltd. Sample Preparation and Security

Brine samples and soil samples were collected by third party geologists, by GeoXplor personnel or Pure Energy Minerals Ltd. staff in the presence of third parties. Brine samples were immediately taken in laboratory-supplied containers, given unique sample numbers acidified using a small amount of laboratory-supplied nitric acid (laboratory recommended) and placed in ice-filled sealed coolers with chain-of-custody paperwork. Typically, given the location of the project, these coolers were then delivered directly to the laboratory for internal shipping (within the laboratory's own system if required) or direct analysis. When samples needed to be kept overnight before delivery, they were stored in a sealed and locked storage container with their chain of custody documentation. The laboratories' sample-receipt records show that samples arrived in good condition, at the correct temperature and with no evidence of leaking or tampering.

11.3 Analytical Methods

Metals analysis was performed using ICP-OES (aka ICP-AES) methods, rather than ICP-MS analysis that is typically used for metals analysis. This method was chosen, based on advice provided by analytical laboratories, as the low mass of lithium (which is the analyte of principal concern) makes it susceptible to larger errors when its quantification is performed using a device that differentiates based on mass (i.e. a mass spectrometer). As such, the optical emission method was used for all samples. All other analyses (anions, TDS etc.) were performed using standard laboratory protocols. All samples (brine and solids) were acid-digested prior to analysis. The choice of laboratory is described in Section 13 below.

11.4 Analytical Results

Table 10: Summary of Pure Energy Analytical Data for CV-1

Laboratory Used		Maxxam	Maxxam	Maxxam	Silver State	Silver State	Silver State	WETLAB	WETLAB	WETLAB	WETLAB
Sampling Date		17th Nov 2014	18th Nov 2014	18th Nov 2014	17th Nov 2014	18th Nov 2014	18th Nov 2014	2nd Apr 2015	2nd Apr 2015	2nd Apr 2015	2nd Apr 2015
	Sample ID	**CV1 @ 710'**	**CV1 @ 580'@ 90 MINS**	**CV1 @ 580'@ 160 MINS**	**CV1 @ 710'**	**CV1 @ 580'@ 90 MINS**	**CV1 @ 580'@ 160 MINS**	**CV1 @ 500' @ 25 mins**	**CV1 @ 500' @ 4 hrs**	**CV1 @ 500' @ 8 hrs**	**CV1 @ 500' @ 8 hrs DUP**
Notes		**1**	**2**	**3**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Method for metals analysis	**Units**	**ICPMS**	**ICPMS**	**ICPMS**	**ICPMS**	**ICPMS**	**ICPMS**	**ICP-OES**	**ICP-OES**	**ICP-OES**	**ICP-OES**
Total Arsenic (As)	ug/L	24.2	24.7	25.7	ND	ND	ND	-	-	-	-
Total Barium (Ba)	ug/L	142	140	138	70	60	50	-	-	-	-
Total Boron (B)	mg/L	103	115	112	17	17	14	19	20	18	20
Total Cadmium (Cd)	ug/L	0.456	0.429	0.309	40	30	60	-	-	-	-
Total Copper (Cu)	ug/L	18.9	19.1	18.4	130	110	110	-	-	-	-
Total Iron (Fe)	ug/L	151	294	161	120	150	110	-	-	-	-
Total Lead (Pb)	ug/L	2.12	2.72	2.83	ND	ND	50.0	-	-	-	-
Total Lithium (Li)	mg/L	204	214	212	301	297	283	200	200	220	230
Total Manganese (Mn)	mg/L	2.10	1.99	1.93	1.10	1.00	0.96	1.60	1.80	1.90	2.10
Total Silicon (Si)	mg/L	29.3	31.0	32.1	-	-	-	32	30	28	30
Total Strontium (Sr)	mg/L	41.5	41.2	40.6	28.8	28.7	29.1	32	33	35	37
Total Zinc (Zn)	ug/L	2520	1080	983	1800	790	820	ND	ND	ND	ND
Total Calcium (Ca)	mg/L	835	783	815	688	699	728	680	700	740	810
Total Magnesium (Mg)	mg/L	464	453	452	359	362	359	340	370	400	420
Total Potassium (K)	mg/L	3660	3690	3650	6530	6110	6590	3600	3700	3900	3800
Total Sodium (Na)	mg/L	41400	40500	41700	17700	7710	15100	33000	33000	38000	39000
ANIONS											
Calculated Parameters											
Total Hardness (CaCO3)	mg/L	4000	3820	3890	3196	3236	3296	-	-	-	-
Dissolved Sulphate (SO4)	mg/L	4800	4400	4380	4226	4204	4346	3000	3300	3600	3500
Dissolved Chloride (Cl)	mg/L	71000	67000	69000	73994	71767	71690	52000	61000	62000	59000
Physical Properties											
Conductivity	uS/cm	143000	139000	138000	-	-	-	-	-	-	-
Physical Properties											
Total Dissolved Solids	mg/L	109000	88900	106000	116900	112000	109200	79000	97000	93000	92000

- = Not analysed
ND = Not detected

Notes:

1. 3" electric submersible pump with intake at 710' below ground surface. Pumping at 0.202 L/s (3.2 gallons/min). Sample taken after 2.5 hrs of pumping
2. 3" electric submersible pump with intake at 580' below ground surface. Pumping at 0.201 L/s (3.19 gallons/min). Sample taken after 1.5 hrs of pumping
3. 3" electric submersible pump with intake at 580' below ground surface. Pumping at 0.201 L/s (3.19 gallons/min). Sample taken after 2 hrs 40 mins of pumping
4. 4" electric submersible pump with intake at 500' below ground surface. Pumping at 9.5 L/s (150 gallons/min). Sample taken after 25 mins of pumping
5. 4" electric submersible pump with intake at 500' below ground surface. Pumping at 9.5 L/s (150 gallons/min). Sample taken after 4 hrs of pumping
6. 4" electric submersible pump with intake at 500' below ground surface. Pumping at 9.5 L/s (150 gallons/min). Sample taken after 8 hrs of pumping; Considered the most robust bulk sample from CV-1
7. 4" electric submersible pump with intake at 500' below ground surface. Pumping at 9.5 L/s (150 gallons/min). Duplicate sample taken after 8 hrs of pumping (labelled as 9 hrs on original lab COC form); Considered the most robust bulk sample from CV-1

Table 11: Summary of Pure Energy Analytical Data for CV-2

Laboratory Used		WETLAB	WETLAB	WETLAB	WETLAB	WETLAB	WETLAB
Sampling Date		29th Mar 2015	30th Mar 2015	30th Mar 2015	02nd Jun 2015	02nd Jun 2015	02nd Jun 2015
	Sample ID	**CV3 @ 470'**	**CV3 @ 490'**	**CV3 @ 530'**	**CV2 @ 680'**	**CV2 @ 800'**	**CV2 @ 850'**
Notes		**1**	**2**	**3**	**4**	**5**	**6**
Method for metals analysis	**Units**	**ICP-OES**	**ICP-OES**	**ICP-OES**	**ICP-OES**	**ICP-OES**	**ICP-OES**
Total Boron (B)	mg/L	-	0.30	0.76	2.9	3.0	3.0
Total Lithium (Li)	mg/L	29	64	24	35	43	42
Total Manganese (Mn)	mg/L	-	2.00	1.30	2.20	2.40	2.40
Total Silicon (Si)	mg/L	-	32.0	83.0	-	-	30
Total Strontium (Sr)	mg/L	-	110	55	43	46	44
Total Zinc (Zn)	ug/L	-	ND	0.014	1.4	0.45	0.66
Total Calcium (Ca)	mg/L	-	2600	990	1200	1400	1300
Total Magnesium (Mg)	mg/L	-	280	110	140	150	150
Total Potassium (K)	mg/L	360	680	390	660	700	690
Total Sodium (Na)	mg/L	4800	11000	5300	6500	7200	6700
Anions							
Dissolved Sulphate (SO4)	mg/L	380	640	250	520	620	550
Dissolved Chloride (Cl)	mg/L	10000	16000	9100	12000	13000	12000
Fluoride	mg/L	-	ND	ND	ND	ND	ND
Physical Properties							
Total Dissolved Solids	mg/L	17000	33000	6300	21000	21000	22000

- = Not analysed
ND = Not detected

Notes:

1 Sample taken from RC drill sample between 460 and 480' bgl

2 Sample taken from RC drill sample between 480 and 500' bgl

3 Sample taken from RC drill sample between 520 and 540' bgl

4 Sample taken using Hydrasleeve between 680' and 670' bgl in static water column inside 3" PVC wellpipe

5 Sample taken using Hydrasleeve between 800' and 790' bgl in static water column inside 3" PVC wellpipe

6 Sample taken using Hydrasleeve between 850' and 840' bgl in static water column inside 3" PVC wellpipe

Note: Some samples labelled as being from CV-3. This name was used by project geologist as this was the BLM permitted name for the borehole; these samples are all from CV-2 as described elsewhere in this report.

11.5 QA/QC

11.5.1 Choice of Laboratory

Anecdotal evidence, and previous experience testing brine samples at a range of analytical laboratories, suggests that lithium analysis is susceptible to wide ranges in accuracy and reproducibility. As such, it was important to eliminate one of the primary sources of analytical error and use a laboratory with proven expertise in analysing for lithium. a Round-Robin testing of various laboratories was developed. The Chemistry Department at the University of British Columbia was used to produce a synthetic brine, somewhat similar to that found beneath Clayton Valley. A sample of this synthetic brine, along with a homogeneous sample of brine from CV-1 (taken at 216 m/710 ft bgl prior to the well being redrilled) were sent to five different commercial analytical laboratories; ALS and Maxxam in Vancouver, BC; Western Environmental Testing Laboratory (WETLAB) and American Assay Laboratories in Sparks, Nevada; and Silver State Laboratory in Las Vegas, Nevada. The results of the analyses are shown in Table 12 below.

Table 12: Summary of Round-Robin QA/QC Analyses

Laboratory Used		ALS	ALS	WETLAB	WETLAB	MAXXAM	MAXXAM	Am Assay	Am Assay	Silver State	Silver State
Report Date		04th Feb 2015	04th Feb 2015	17th Feb 2015	17th Feb 2015	6th Feb 2015	6th Feb 2015	9th Mar 2015	9th Mar 2015	13th Feb 2015	13th Feb 2015
	Sample ID	CV1 @ 710'	Synthetic Brine	CV1 @ 710'	Synthetic Brine	CV1 @ 710'	Synthetic Brine	CV1 @ 710'	Synthetic Brine	CV1 @ 710'	Synthetic Brine
Notes		1	2	1	2	1	2	1	2	1	2
Method for metals analysis	Units	ICPOES	ICPOES	ICPOES	ICPOES	ICPMS	ICPOES	ICPAES	ICPAES	ICP-OES	ICP-OES
Total Boron (B)	mg/L	22	99	24	120	43	39	-	-	15	93
Total Lithium (Li)	mg/L	208	324	250	410	275	253	213	275	285	455
Total Silicon (Si)	mg/L	20.9	26.9	27	34	30	29	-	-	ND	ND
Total Strontium (Sr)	mg/L	32.5	48.8	40	62	50	49	-	-	32.5	47
Total Zinc (Zn)	mg/L	3.2	ND	3.1	0.15	2.4	2	3	ND	2.3	ND
Total Calcium (Ca)	mg/L	730	453	880	600	842	799	922	564	798	503
Total Magnesium (Mg)	mg/L	384	7	510	ND	435	429	-	-	483	10
Total Potassium (K)	mg/L	3510	4150	4500	5600	4000	4090	-	-	2740	3640
Total Sodium (Na)	mg/L	36900	45200	42000	52000	39100	40100	-	-	35200	46200

- = Not analysed
ND = Not detected

Notes: **1** Homogeneous sample taken from CV-1 at 710' below ground surface using 3" electric submersible pump. Sample was split and decanted into laboratory supplied containers and then sent to different laboratories for analysis.

2 Homogeneous synthetic brine solution synthesised at UBC Chemistry Department. Sample was split and decanted into laboratory supplied containers and then sent to different laboratories for analysis. Synthetic sample was analysed repeatedly using ICP-OES and several Li-spikes, and determined to contain 360 mg/L Li

It can be seen that the commercial labs produced a wide range of results for the lithium content of the homogeneous synthetic brine standard (standard had Li concentration of 360 mg/L). ALS Laboratory and WETLAB showed the lowest deviation from the standard, and based on sample transfer logistics, and the fact that WETLAB also had extensive experience testing brine samples from the adjacent Albemarle wells, WETLAB was chosen to provide analysis of Pure Energy Minerals Ltd samples from the Clayton Valley South property.

11.5.2 Quality of Data

Where duplicate samples were taken, duplicate analyses were within acceptable variation. WETLAB runs an extensive QA/QC process and all QA/QC data are provided with final analytical data, and these showed no concerns with the data provided.

The Round-Robin process demonstrates that various laboratories can produce large variations in analytical results from homogeneous samples. Additional duplicate brine samples from CV-1 and CV-2 were sent to a secondary laboratory (Silver State Laboratory in Las Vegas, Nevada) for analysis. The analyses from this secondary laboratory demonstrated similar orders of magnitude of lithium in the samples, but showed more variance in data. As such, the author is satisfied that the Round-Robin process was sufficient in verifying laboratory quality for the main analyses.

The laboratories used for the analysis of samples gathered from the claims are all independent of the issuer. The ALS Fort Collins Laboratory (as used for data from SPD-8 and SPD-9) is operated in line with several different accreditations and Quality Management Systems (QMS), including, but not limited to, the US Environmental Protection Agency (USEPA), US Department of Defence (DoD), American Water Works Association (AWWA), National Oceanic and Atmospheric Association (NOAA) and the National Voluntary Laboratory Accreditation Program (NVLAP).

Western Environmental Testing Laboratory is accredited and independently tested by The State of Nevada Department of Conservation and Natural Resources (Division of Environmental Protection), to ensure that the laboratory conforms to US Environmental Protection Agency (USEPA) analytical methods and standards.

All laboratory accreditations were confirmed and up-to-date when this report was written.

All laboratories used have their own extensive Quality Management Systems (QMS), which involve duplicates, blanks, spikes and spike recoveries. Each lab provides a Quality Assurance and Quality Control (QA/QC) summary with each batch of analyses. The only problem reported during analysis is with regard to conductivity testing, as the brine samples typically have conductivities in excess of the usual calibration range. The laboratories corrected for this by using a straight-line extrapolation from their calibrated range. All other analyses and QA/QC data demonstrated that there were no reported problems with the analyses provided by the laboratories.

It is the author’s opinion that the data provided by the independent, accredited laboratories, the methods of sample preparation and sample security are sufficient for the purposes of compiling this report.

12 DATA VERIFICATION

The author visited the property on April 2, 2015 and was able to visit the completed CV-1 well and the active drilling at CV-2, as well as observe the samples and logs taken in the field at CV-2 by the project geologist (Nick Barr; also independent of Pure Energy Minerals Ltd.). At the time of visiting, the author was able to observe the pumping test equipment in place at CV-1, view videofiles of the completed pumping test and talk to the drilling crew (Harris Exploration Drilling), field operators from GeoXplor Ltd and the project geologist. The author was also able to witness sampling and logging procedures at CV-2, and found them acceptable for this stage of project development.

Several of the claims and a small number of the associated stakes were also visited at this time, as well as visiting the general area of the project site and the town of Silver Peak. The author is very familiar with the general geology, hydrogeology and mineralisation in the Pure Energy Minerals Ltd claim area, as well as surrounding areas, owing to prior experience managing the exploration programme for Rodinia, and being present while boreholes SPD-8 and SPD-9 were drilled and sampled.

The laboratory data produced for samples analysed from CV-1 and CV-2 are consistent with the author's previous experience of samples taken from SPD-8 and SPD-9. The author did not collect or submit additional samples for analysis. The author did review original laboratory datasheets and QA/QC information to verify the quality of the laboratory-supplied information (QA/QC is described separately in Section 11.5).

The author is satisfied that the data provided in this report accurately reflects the original information and is acceptable for use in brine resource estimation at this stage of project development.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Although the Clayton Valley South project is at an early development stage, some preliminary process-testing work has been completed by Pure Energy. This work has consisted of shipping 57 L (15 gallons) of brine sample from CV-1 to Tenova Bateman Technologies' laboratory in Tel Aviv, Israel. The samples were collected in pre-rinsed 19 L (5 gallon) HDPE containers on November 17th 2014 from CV-1 using the 76 mm (3 in) electric submersible pump and were collected at the same time as Sample CV1@710' (note 1) as shown in Table 10. Tenova Bateman's in-house analytical laboratory showed the brine sample to contain 0.24 g/L of Li (i.e. 240 mg/L Li) with associated alkali earth contaminants. These samples are considered to be representative for the purposes of *preliminary* process testing, as they are very similar in composition to the most representative bulk samples that were taken from CV-1. The brine underwent the following process testing:

- **Ca and Mg removal.** This was accomplished using a proprietary flat-sheet membrane, 60 bar of differential pressure at laboratory scale flow rates of 30-60 L/m^2/hr.
- **pH adjustment.** Following removal of Ca and Mg, the pH was adjusted to suitably alkaline conditions using soda ash and caustic soda to prepare it for solvent extraction.
- **Solvent Extraction.** The pre-treated brine (Ca & Mg removed, pH adjusted) was contacted with Tenova Bateman's proprietary solvent to remove Li preferentially from the brine and partition it into the solvent.
- **Solvent Scrubbing and Stripping.** The loaded solvent was scrubbed with dilute hydrochloric acid and/or distilled water to purify the solvent, and was then stripped of the Li using concentrated (35%) hydrochloric acid to make a high purity LiCl solution.

The process testing was successful and the following results were derived:

- Ca and Mg were efficiently removed from the raw brine using the membrane technology. Over 93% of the Ca and effectively 100% of the Mg and Sr were removed after 4 stages of membrane treatment.
- Li recovery from the brine was effectively 100%.
- Solvent scrubbing is best achieved using dilute HCl with 3-5 scrubbing stages.
- The stripping process is very efficient and resulted in a LiCl solution end product with purity greater than 99.9%.

These data from the initial process testing are encouraging and highlight that alternatives to the traditional evaporation pond process are available. Initial data from Tenova Bateman Technologies suggest that the process as-tested works at Li concentration in brines greater than approximately 20 mg/L, though a wide range of factors will dictate full-scale plant efficiencies.

The bench scale testing strongly supports further testing of the Tenova Bateman technology, either at a mini-pilot or pilot plant scale, ideally using actual brine samples from beneath the Clayton Valley South Property.

Pure Energy Minerals Ltd. are also assessing other technologies (other solvent technologies, selective resins, pre-treatment etc.) that may be appropriate for processing the Li-brine from Clayton Valley, as it is not currently believed that permitting and building new evaporation ponds in Clayton Valley would be either feasible or desirable.

14 MINERAL RESOURCE ESTIMATE

14.1 Overview

Determination of a brine resource is based on the geometry and extent of an aquifer (or aquifers), the porosity of the aquifer or specific yield of brine from the aquifer, and the concentration of lithium within the brine. As discussed briefly in Section 8, there is the potential, based on what is known about the Clayton Valley brines to date, to suggest that interactions between the solid aquifer materials and the brine may transfer some lithium from solid phase into solute, and if that is the case, the Li within the solid matrix could be considered to be part of the resource assessment. However, the data to support this are not sufficiently robust to date, and therefore this resource assessment considers only the Li observed in brine.

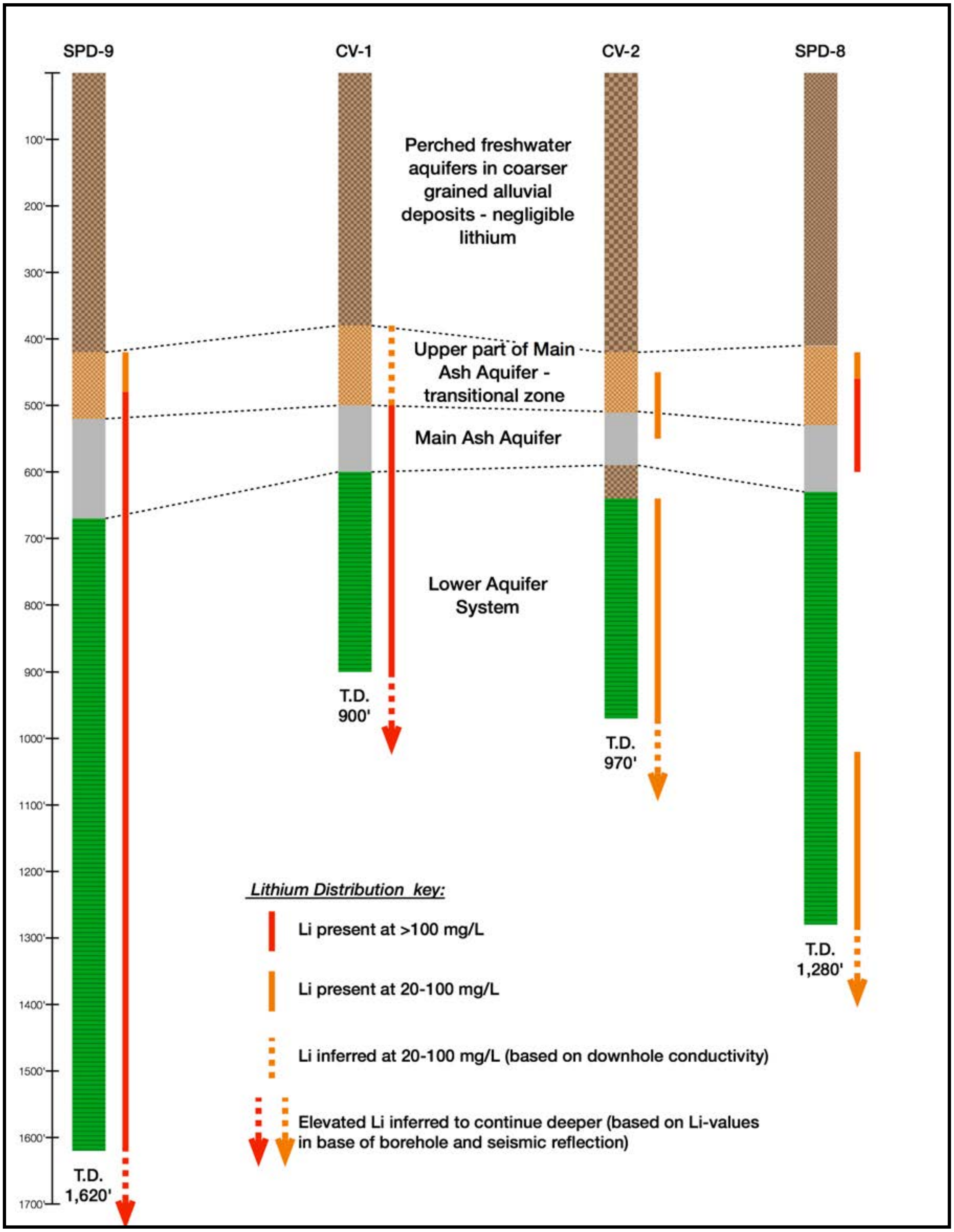
In comparison to recent resource assessments of other lithium brine deposits (i.e. Argentinean salars), the Clayton Valley South brines are deeper, and not amenable to exploration methods that yield large amounts of cost-effective data (e.g. trenching and shallow auger holes). As a result, resource estimation at the early stage of project development must be achieved using fewer, more widely distributed data points, extrapolated using geophysics where appropriate.

14.2 Definition of Resource-Bearing Formations

As described elsewhere (see Sections 9 and 10), the simple hydrogeological model for the basin consists of perched freshwater aquifers in alluvial gravel deposits that overlie brine contained within a multi-level aquifer consisting mostly of interbedded lacustrine sediments. The brine-bearing aquifer can be separated into different horizons, based more on stratigraphic variations and brine-grade, and these have been given the names, based on more extensive work completed elsewhere in the basin, of Main Ash Aquifer (MAA) and Lower Aquifer System (LAS). It is not known at present (and is not discussed in previous papers on the subject e.g. Zampirro, 2004), whether the differently named aquifer systems are indeed separate aquifers in the truest sense. It is most likely that they are broadly interconnected, and that pumping from one aquifer will yield a response relatively quickly in the other. It is expected that a greater understanding of the distinctions between (or not) the different aquifers and their connectivity will be investigated further as additional exploratory work is completed. This can be relatively easily accomplished using wells such as CV-1 that can be isolated using packers to pump from one aquifer and measure the response in the other.

A summary of the observed stratigraphy, aquifers and generalised lithium distribution is provided in Figure 22.

Figure 22: Summary of Stratigraphy, Aquifers and Li-Distribution observed from Boreholes



14.2.1 Main Ash Aquifer

The MAA consists of a series of airfall tuff and ash layers, possibly with some reworking, that are interbedded with silts, sands and gravels. In places, lapilli are observed in the ash layers, and in general, the ash/tuff sequences have an overall grain size similar to a coarse sand deposit. At their thickest, the ash/tuff beds are observed extending over a complete drill rod length (i.e. >6 m/20 ft), but typically are observed as an interbedded mixture, where individual beds are 0.6-0.9 m (2-5 ft) thick. The highest lithium values correlate well with the thickest sequences of ash/tuff.

The upper part of this sequence contains a greater proportion of alluvial sediments, and in this section, lithium values are lower overall and show a gradation from the freshwater aquifer above (with effectively no lithium) to the main ash sequence below.

In general, the transitional zone that sits at the top of the MAA is observed to be approximately 31 m (100 ft) thick, while the main ash/tuff interbedded sequence is from 24-48 m (80-160 ft) thick.

14.2.2 Lower Aquifer System

The LAS consists of a series of interbedded silts and fine sands (often green in colour) with common ash/tuff and gravel layers. In places, thicker beds containing a greater proportion of clay are observed, but it is not known at present whether these serve as aquitards (i.e. a water-saturated sediment or rock whose permeability is so low it cannot transmit any useful amount of water).

Interbedding is observed generally at a scale of 0.6-0.9 m (2-5 ft), but some thicker gravel and clay beds are observed. The generally finer grained and laminar nature of these units suggests that they were deposited in a low-energy lacustrine environment, and are consistent with other observations elsewhere in Clayton Valley of a Pleistocene lake depositional environment (see Section 6).

None of the boreholes drilled to date have reached the base of this interbedded lacustrine aquifer, and lithium concentrations have been relatively constant with depth in each borehole through this formation. Examples of this formation from the adjacent Albemarle property (see Section 6) suggest that this formation is generally 10-90 m (33-295 ft) thick, however drilling beneath the Pure Energy property has encountered thicknesses in excess of 274 m (900 ft), suggesting that the lacustrine basin was more fully developed in the southern half of Clayton Valley.

Data from the seismic reflection study show a similar sequence of laminar, parallel reflectors down to depths of at least 610 m (2000 ft), and often much deeper in other parts of the basin. As such, it is possible that the LAS extends to thicknesses significantly in excess of 396 m (1,300 ft), however, these deeper, laminar deposits will need to be drilled in order to assess the possible resource deeper in the basin.

14.2.3 Lower Gravel Aquifer

Work on the northern Albemarle property has shown that a gravel aquifer underlies the LAS and contains lithium brines; this aquifer has been named the Lower Gravel Aquifer (LGA; see Section 6) and has been noted as being 50-100 m (164-328 ft) thick. The seismic reflection data show a series of non-laminar, laterally inconsistent reflectors in many parts of the base of the basin, above the Palaeozoic bedrock. The form of these reflectors is very similar to those observed in the upper 122 m (400 ft) of the basin where they are coincident with alluvial gravel deposits, and as such, it is reasonable to interpret these lower reflectors as basal gravel deposits. Where present, these basal gravels are between 91-305 m (300-1,000 ft) thick. At this stage of resource assessment, it is not possible to state whether these basal gravels are the equivalent of the LGA until they are investigated using intrusive techniques.

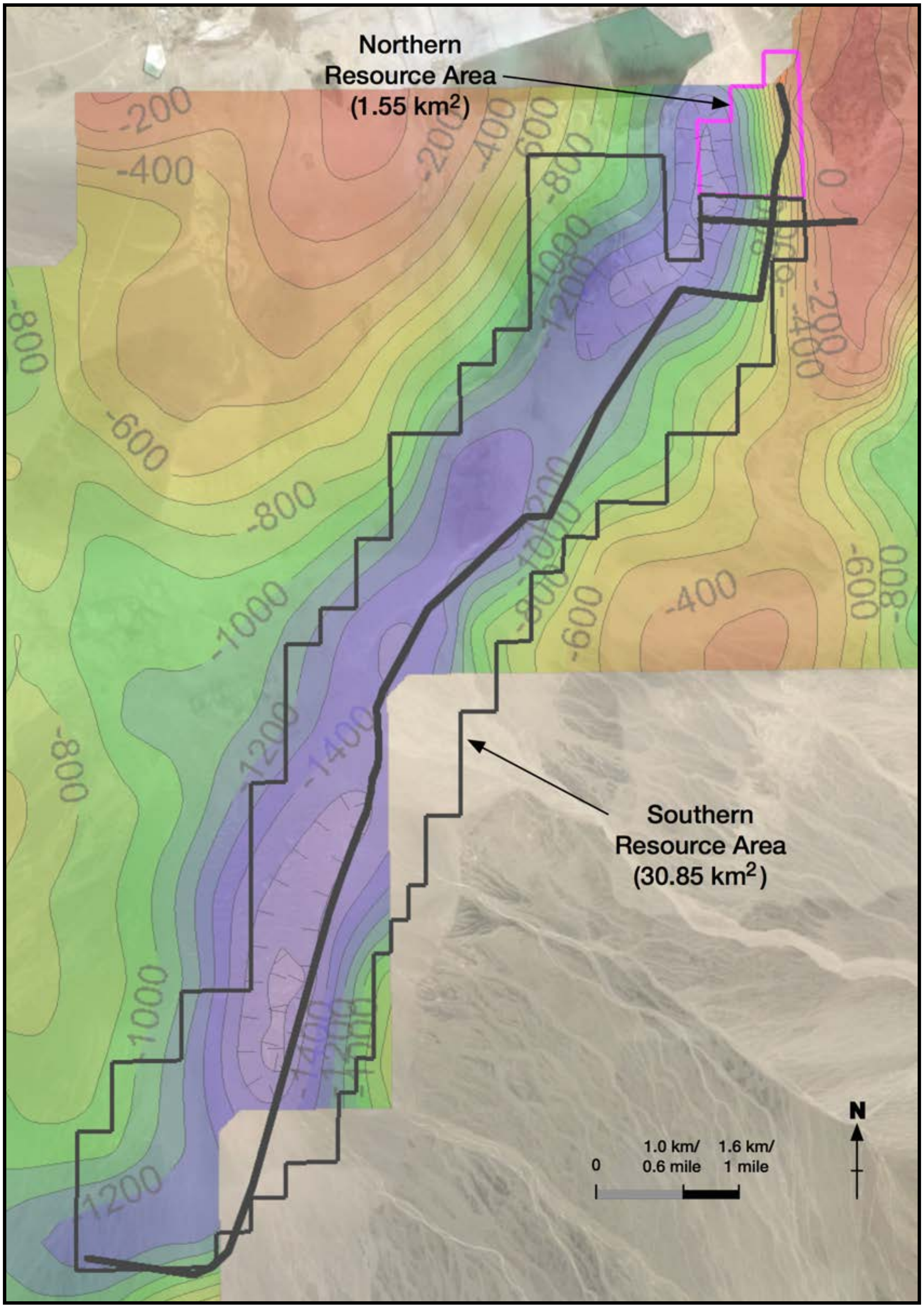
14.3 Extent of Resource-Bearing Areas

The total area for resource assessment is 3,240 hectares (8,004 acres), as Pure Energy's entire claim areas are within the basin fill deposits. All of the claim areas are either within Pure Energy's direct control, or within their control through a series of lease/option agreements. Although it is very likely that there are basin infill deposits that are outside of and contiguous to Pure Energy's claim area, and that brines from these areas may be mobilised onto Pure Energy's claims if production-scale pumping were initiated, these additional areas of basin fill have not been included in the resource calculation.

While intrusive drilling work has been completed in the northern part of the Pure Energy claim area, the gravity survey combined with the fact that formations directly observed in the boreholes can be correlated directly with reflectors in the seismic reflection survey mean that brine-bearing horizons can be traced throughout the Pure Energy claim area with a degree of confidence suitable for an Inferred Resource estimate.

The property is divided into two main resource areas, the smaller northern area, characterised by the data from SPD-9 and CV-1, and the larger, southern area characterised by SPD-8 and CV-2 (see Figure 23). Thicknesses of the brine-bearing formations used for resource assessment are based on actual observed thicknesses from borehole data, even where it is known that the borehole is only partially penetrating the brine-bearing formation. As such, it should be understood that the resource estimate is conservative in this regard.

Figure 23: Location of Resource Calculation Areas



Note: Imagery from GoogleEarth. Claim area from BLM PLSS database. Depth to bedrock contours in meters from Hasbrouck 2009. Line of Seismic Reflection Survey from Hasbrouck 2015b

14.4 Estimated Resource

The resource consists of a lithium-bearing brine that is contained within the pore spaces between clastic sediments that are present beneath Pure Energy Minerals' total claim area. At this stage of assessment, several assumptions are made on the distribution of the brines, and it is likely that the estimated resource may change as more data become available.

The key assumptions are as follows:

- A uniform porosity of 0.34 based on the drainable porosity data from Black Eagle Consulting was used. Actual porosities in the ground are expected to vary significantly throughout the formations given the wide range in grain sizes and sorting observed during drilling, and the interbedded nature of the formations intersected. For the purposes of this early stage assessment of the resource, this porosity estimate is considered to be reasonable, and is also representative of porosities observed in very similar local basin infill materials (Belcher and Sweetkind, 2010). Given the interbedded nature of the materials, it is expected that estimates of porosity and storage coefficients gained from conducting long-term pumping tests using monitoring wells will provide more robust estimates for future resource assessments at the property, rather than attempting to gather large numbers of in-situ, small-scale physical samples for laboratory drainable porosity sampling.
- Lithium grades in the brines are based on data collected from boreholes, and notes are provided below Table 13 that describe how grades were calculated.
- Each aquifer, in each zone (two zones are assumed), is treated as a flat, tabular unit of constant thickness. The author considers that this assumption is adequate at this stage of resource assessment. It is likely that the resource will be broken down into a greater number of smaller zones as more data become available. It is also likely that more sophisticated models of aquifer shape will be used to calculate resource estimates in the future, but this level of assessment is not warranted at this time.
- The aquifers described in more detail above in Sections 14.2 and 14.3 extend throughout the entire Pure Energy Minerals claim area. This assumption is based on the extensive high-quality geophysical data that was collected as part of this study.
- A lithium content cut-off grade of 20 mg/L was used, based on preliminary process testing as described in Section 13. This cut-off is lower than that used for resource estimates that assume a traditional evaporation pond process, but is suitable in this case as Pure Energy Minerals Ltd have stated that the resource will be processed using a newer, more efficient solvent exchange (or similar) process. Should additional data become available with regard to the process testing, then this cut-off should be revisited based on new data. The author considers this number adequate for this stage of resource assessment.

- The calculated resource for each polygon/formation is the sum of the products of saturated hydrogeological unit thickness, polygon area, porosity and lithium content.
- The resource is described in terms of Lithium Carbonate Equivalent (LCE), which is derived by multiplying the Li metal content by a factor of 5.323 (http://www.pureenergyminerals.com/lithiumtypes/).

Table 13: Inferred Resource Estimate

Zone	Saturated Thickness (m)	Li Grade mg/L	Lithium Resource LCE (metric tonnes)
Northern Zone Upper Transitional Part of MAA	36 [1]	102 [6]	10,300
Northern Zone MAA	31 [2]	370 [7]	31,700
Northern Zone LAS	299 [3]	194 [8]	163,000
Southern Zone MAA	43 [4]	102 [9]	245,000
Southern Zone LAS	177 [5]	37 [10]	366,000
Total			**816,000**

Notes:

[1] Based on 128 m to 165 m (420ft to 540 ft) bgl section from SPD-9 and CV-1; [2] 165 m to 195m (540ft to 640ft) bgl section of MAA in SPD-9 and CV-1; [3] Based on 195 m to 494 m (640ft to 1,620ft) of LAS in SPD-9 and CV-1. Seismic shows that this could likely be extended significantly deeper; [4] Based on 140 m to 183 m (460ft to 600ft) bgl section of MAA in SPD-8 and CV-2; [5] Based on 207 m to 384 m (680ft to 1,260ft) bgl section intersected in CV-2 and SPD-8. Seismic shows that this could likely be extended significantly deeper; [6] Average of SPD-9 samples from this interval; [7] Average of SPD-9 samples from this interval; [8] Average of SPD-9 samples from this interval; [9] Average of SPD-8 samples from this interval (better sample density relative to CV-2); [10] Average of combined SPD-8 and CV-2 samples from this interval.

Note that in Table 13, if the bulk sampling data from CV-1 are used instead of the data as described in Notes [2] and [3], then the resource size is increased by approximately 10,000 mt LCE, but the more conservative grades are used for the purposes of this assessment.

As described above, the **Inferred Resource** estimate for the Pure Energy Clayton Valley South claims is approximately **816,000 metric tonnes of Lithium Carbonate Equivalent**. This estimate is relatively early stage in nature, and it is recommended that additional drilling and other work be conducted to supplement the data and move it towards a resource estimate with a higher degree of confidence (i.e. Indicated or Measured). It is believed that many of the parameters used to estimate this resource are conservative in nature. For example, the true thickness of the resource may be greater but will need to be proved via additional drilling; also some lithium grades used in the calculation are relatively low compared to those observed elsewhere in the basin, and are likely affected by marginal freshwater aquifers that have caused some dilution in certain parts of the aquifer. However, this conservative approach is relatively standard for NI43-101 resource assessments, and is thought to be appropriate for the amount of data available at this time.

While each salar is different, and the techniques used to investigate and report the resources contained therein necessarily have to vary, every attempt has been made to ensure consistency, and this resource estimate has been produced following the various guidance documents that have been produced for the purposes of standardising mineral resource estimates; for example those provided by the Ontario Securities Commission (see: OSC Staff Notice 43-704) and the Canadian Institute of Mining, Metallurgy and Petroleum (see: CIM Block683_Doc147).

Key tenets from those documents including the use of geophysics, the importance of performing long-term pumping tests, understanding aquifer transmissivity and other key hydrogeological parameters, understanding effective and drainable porosities, understanding aquifer geometry, collecting representative samples etc. have been followed. Where necessary, professional judgement has been exercised to substitute one technique for another to answer the same question. For example, the deeper, clastic aquifers present in Clayton Valley necessitated the use of drilling techniques that did not allow for core sample retrieval. As such, it was felt by the author that the installation of quasi-production wells allowed for the retrieval of bulk brine samples and performing pumping tests, which resulted in a similar level of understanding. Therefore, although subtle variations from the key tenets as described in the guidance documents were used in this resource assessment, in the author's opinion, the guiding principles have been adhered to.

The resource as estimated is in-situ, that is, the resource is calculated as a lithium-containing brine present within the pore spaces beneath the Pure Energy Minerals claims. Based on the results of the long-term pumping tests, it is evidenced that the lithium-bearing brine can be extracted from the solid matrix and pumped to surface. This is also proved empirically by the long-term operation of the adjacent Silver Peak lithium property.

It is not the current intention to process the brine using traditional evaporation techniques, but rather to process it using modern solvent extraction (or similar) processes. As such, based on the author's knowledge of those processes and the preliminary work performed to date, it is likely that the lithium-containing brines as described in this report have reasonable prospects for eventual economic extraction and processing.

No resource assessments for other components of the brine, e.g. potash, have been contemplated at this time.

The resource as described, is situated in a salar that is currently being used for lithium brine extraction and processing, and preliminary work suggests that, to the best of the author's knowledge, there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing or political factors that would likely adversely affect the mineral resource beneath the Pure Energy Mineral Ltd claims. However, there are two factors that are worthy of additional discussion. The first relates to the effects that may or may not be observed on the Pure Energy Minerals Ltd claims from the pumping that takes place from the adjacent Albemarle production wells. It is recommended that this effect be investigated further, likely through the use of water level dataloggers placed in existing or new wells to monitor the effects of pumping from the adjacent property. The effect, or not, from this pumping on the resource cannot be estimated at this time. The second relates to the existence of the sand dunes in the southern part of the claims. The drilling of extraction wells through these dunes is not permitted based on current protection levels as directed by the BLM. However, extraction wells can be placed around the periphery of the dunes to access the brine beneath them. It is recommended that future additional wells (and monitoring wells for pumping tests) be placed in this area as the resource estimate is refined, in order to better understand how effectively brine from beheath the dunes may be extracted.

It should be understood that the evaluation of brine resources is complex and requires input from a wide variety of professionals, and as such, considerable input has been provided to the author by geologists, hydrogeologists, geochemists, geophysicists and chemical process engineers. Excerpts of their reports have been provided where relevant in the appendices, but clarification on many points has been sought directly via correspondence with the other technical experts.

15 MINERAL RESERVE ESTIMATES

This Section is not required at this stage of resource development.

16 MINING METHODS

This Section is not required at this stage of resource development.

17 RECOVERY METHODS

This Section is not required at this stage of resource development.

18 PROJECT INFRASTRUCTURE

This Section is not required at this stage of resource development.

19 MARKET STUDIES AND CONTRACTS

This Section is not required at this stage of resource development.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

This Section is not required at this stage of resource development.

21 CAPITAL AND OPERATING COSTS

This Section is not required at this stage of resource development.

22 ECONOMIC ANALYSIS

This Section is not required at this stage of resource development.

23 ADJACENT PROPERTIES

As discussed in Section 6.1, the property to the north of, and adjacent to Pure Energy's claim area is operated as a lithium brine operation by Albemarle Corporation. This facility has been operational since 1967 and uses the traditional evaporation pond model to concentrate the brines before processing on-site to make a range of Lithium Carbonate and Lithium Hydroxide products. It is understood, based on limited data (see Garret, 2004; Table 6 this report; and Munk pers. comm.) that Li concentrations of the blended brines that enter the first stage of the evaporation ponds have decreased somewhat over time, but have been relatively consistent in the 150-200 mg/L range in recent history.

Albemarle (Rockwood at the time of award) received DOE matching grants in 2010 to upgrade and rehabilitate several evaporation ponds, drill new production wells and rehabilitate several older wells, as well as provide some upgrades to the processing plant.

Given the proximity of several of Albemarle's production wells to Pure Energy's claim area, and the broadly consistent hydrogeology that is similar beneath the two properties (based on drilling logs, the recent seismic reflection study and previous descriptions of the Albemarle site e.g. Zampirro, 2004), it is probable that drawdown from the Albemarle wells is affecting lithium brines beneath the Pure Energy claim area, especially in the most northerly part of the claims. The full extent of this likely effect is not known at this time.

Other placer claims for Li exploration are current and held in the Clayton Valley area; to the north of the Albemarle operations by GeoXplor Corp, and to the south-west of the Pure Energy Mineral Ltd. claims by Nevada Alaska Mining Co. Inc. Exploration has taken place on these properties (drilling and geophysics), but the current state of exploration is not known. Pure Energy Minerals Ltd. holds no stake or interest in these other exploration properties.

It should be noted that the author has been unable to verify the information regarding the adjacent properties, and that the information discussed in this section is not necessarily indicative of the mineralization on the Pure Energy Minerals Ltd property.

24 OTHER RELEVANT DATA AND INFORMATION

Drill holes SPD-9 and CV-1, from which the northern property inferred resource is calculated, are approximately 1 km from the active pumping wells of the Albemarle operation. The affect of drawdown from these wells on the inferred resource is not known at this time.

The author is unaware of any additional data or relevant information that could be considered for this report. The author is not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report. No additional information or explanations are necessary to make the report understandable.

25 INTERPRETATION AND CONCLUSIONS

The results of this investigation and resource assessment are as follows:

- The depth and extent of the basin containing lithium-brines has been adequately defined by gravity and seismic reflection surveys;
- All boreholes drilled to date on the Pure Energy claim area have encountered lithium-brines;
- Boreholes to date have not found the base of the lithium-brine bearing zones;
- Seismic reflection surveys have shown that the same lithologies that host the brines, as correlated with the boreholes, appear to extend much deeper into the basin, and that the same lithologies, the Main Ash Aquifer and the Lower Aquifer System, appear to extend laterally effectively continuously throughout the whole claim area of Pure Energy;
- Pumping tests performed show that the brine can be sustainably pumped from the main aquifer units at rates equivalent to those used for production on the adjacent Silver Peak property;
- Marginal and perched freshwater aquifers may dilute brine grades in locations, and it is expected that grades will vary throughout the aquifers as additional boreholes are drilled;
- Ongoing data collection and analysis reinforces the conceptual model for lithium-brine distribution and basin hydrogeology;
- The Inferred Resource for the Pure Energy Clayton Valley South claim area is estimated at **816,000 metric tonnes of Lithium Carbonate Equivalent,** using conservative parameters.

The data gathered to date are acceptable for this level of resource assessment, and it is felt that the interpretation of the data is relatively conservative. As such, it is not thought by the author that there are any significant risks or uncertainties that may negatively affect the resource estimate.

The drilling and pumping test data from the Clayton Valley South project continue to be encouraging. The clastic infill and volcanic airfall sediments that comprise the basin and host the lithium brines are extensive and laterally consistent. Owing to their depth and nature, future exploration will need to combine industry best and standard practices where possible, but also utilise practicable solutions that develop the data necessary to increase the degree of confidence in the lithium resource assessment.

As described elsewhere in the report, it is the proponent's expressed objective that the brine resource will be processed using new, more efficient technologies (rather than traditional evaporation ponds), and preliminary testing to date has been positive. The adjacent Silver Peak operation has been processing similar (though not verifiably the same) brines since 1967 using traditional techniques. Given the more efficient nature of the new processing technologies and the nature of the resource, there is currently no significant clear risk or uncertainty to the project's economic viability now, or in the foreseeable future.

It should be reiterated however, that the project is still at an early stage of development, and additional exploration work and process testing will almost certainly result in the resource estimate being refined, as is usual for early to mid-stage mineral development projects.

Qualified Persons involved with the project have extensive experience in lithium resources and the exploration thereof, and the geology and hydrogeology of brine-bearing basins. Techniques used to evaluate the Inferred Resource incorporate best available technology and practice. Resource calculation includes information of acceptable quality and has been validated. The sampling systems and data interpretation methods reported have been adequately checked and are conservative.

26 RECOMMENDATIONS

The Clayton Valley South Project has significant merit and warrants continued work to upgrade the resource to indicated and measured status. The following recommendations are made:

- Install monitoring devices in CV-1 and CV-2 to evaluate the drawdown effects of the existing Albemarle production wells;
- Extend the drilling programme into the southern part of the property to investigate the lateral extent of the known Li-brine bearing horizons and Li concentration. An initial phase of lower-density exploration drilling is recommended prior to infill drilling;
- DWRC drilling or similar is recommended in order to obtain the best quality samples, but if not feasible, more traditional drilling techniques (e.g. mud-rotary) should be supplemented with additional downhole geophysics and low-flow sampling to obtain better samples and formation data;
- Advance one or more boreholes deeper into the Clayton Valley basin fill materials to assess the total thickness of the Li-brine bearing horizons;
- Consider triple-tube core drilling to obtain better in-situ sediment samples for testing the aquifer parameters.
- Complete additional west-east transects of the basin using seismic reflection techniques to better define the 3D distribution of Li-brine bearing horizons;
- Complete additional long-term pumping tests in new wells in other parts of the basin to better determine relevant aquifer transmissivities, storativity, bulk aquifer porosities and potential production pumping rates. At least one of these tests should utilise a monitoring well to allow for full characterisation of these parameters. These data will allow for increased hydrogeological characterisation;
- Collect all additional brine and soil samples for chemical analytical testing and physical testing to allow better characterisation of the resource.

The estimated budget for these activities is CAN$4.26M (US$3.47M) as shown in Table 14. This figure includes recommended exploration work, but does not include ongoing process testing work, other pilot scale activities, or any additional permitting or pre-feasibility level assessment. The recommended tasks given below, together with ongoing monitoring activities will help move the project towards an upgraded indicated and measured status. However, it is likely that some infill drilling (not estimated below) will be required to allow a true measured and indicated resource to be defined.

A groundwater flow model that encompasses the entire claim area and includes interaction with freshwater aquifers around the edge of the claim area, plus the adjacent Albemarle production area, will be required to understand the mineral reserve at the property and will likely be required for a preliminary feasibility level assessment of the Project.

Table 14: Estimated Costs for Drilling, Sampling, Well Construction, Geophysics and Pumping Tests

Recommended Task	Estimated Cost US$	Notes
Drilling activities	2,700,000	Assumes 4 ‘similar’ boreholes plus one deeper borehole and one monitoring well
Well Installation, Pumping Tests and Hydrogeological Reporting	520,000	Assumes 3 well installations and 2 long-term pumping tests
Seismic Reflection Survey and Reporting	200,000	Assumes approximately 10 km of transects
Soil, brine, porosity lab samples	50,000	-
Total	**US$3,470,000**	

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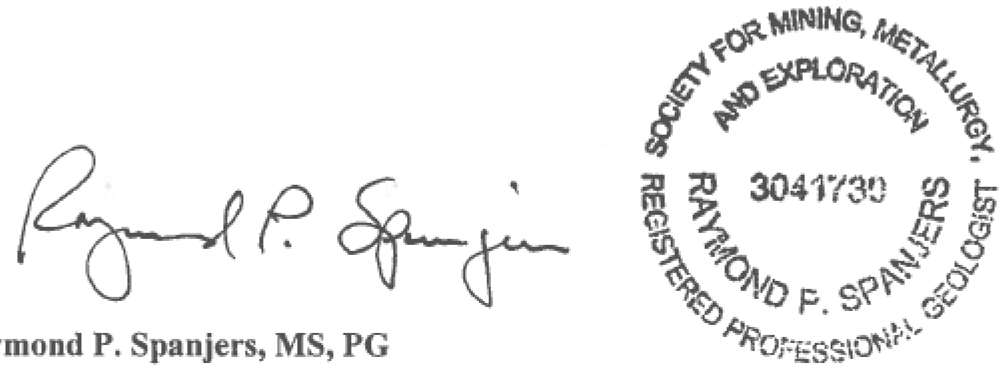
Appendix 1.

Certificate of Qualifications

I, Raymond P. Spanjers, certify that:

- I am a consulting geologist residing at 891 Ridge Vista Road, Gerton, NC 28735, US
- I am the author of the report titled "Inferred Resource Estimate for Lithium, Clayton Valley South Project, Clayton Valley, Esmeralda County, Nevada, USA." This report to which this certificate applies, has an effective date of July 17th, 2015.
- I earned a B.S degree in Earth Science from the University of Wisconsin – Parkside, 1977.
- I earned an M.S. degree in Geology from North Carolina State University, 1983.
- I am a Registered Professional Geologist through the Society for Mining, Metallurgy & Exploration (SME), Number 3041730RM.
- I have practiced by profession in geology since 1980 and 35 years of experience in exploration, mining and mineral processing of industrial minerals.
- I have managed the exploration and reporting of lithium brine properties in Clayton Valley, Nevada, USA, Chile and Salta and Catamarca Provinces in Argentina. My experience includes the exploration of shallow and deep clastic sediment-hosted lithium brine deposits using a wide range of investigative techniques. I have collaborated with expert teams to develop resource estimates, extraction and processing options, and preparation of preliminary economic assessments for those lithium brine resources.
- I have read the definition of Qualified Person set out in NI 43-101 and meet all of the requirements.
- I visited the Pure Energy Minerals Ltd property on April 2, 2015.
- I am responsible for this entire technical report.
- I am independent of Pure Energy Minerals Ltd as described in Section 1.5 of NI 43-101 other than providing industry-standard consulting services.
- I have had prior involvement with the subject property of this report as Manager of Exploration for Rodinia Minerals, Inc., which has no current interest in the subject property. I am independent of the property.
- As of the date of this certificate, to my knowledge, information and belief, this Technical Report contains all scientific and technical information required for disclosure, and is not misleading.
- I have read the NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance with that guidance.

Dated this 17th Day of July, 2015.



Raymond P. Spanjers, MS, PG

"Original Document signed and sealed by Raymond P. Spanjers, MS, PG"

Appendix 2.

Reconnaissance Gravity Survey

Rodinia Minerals, Inc
(Forbes and Manhattan, Inc)

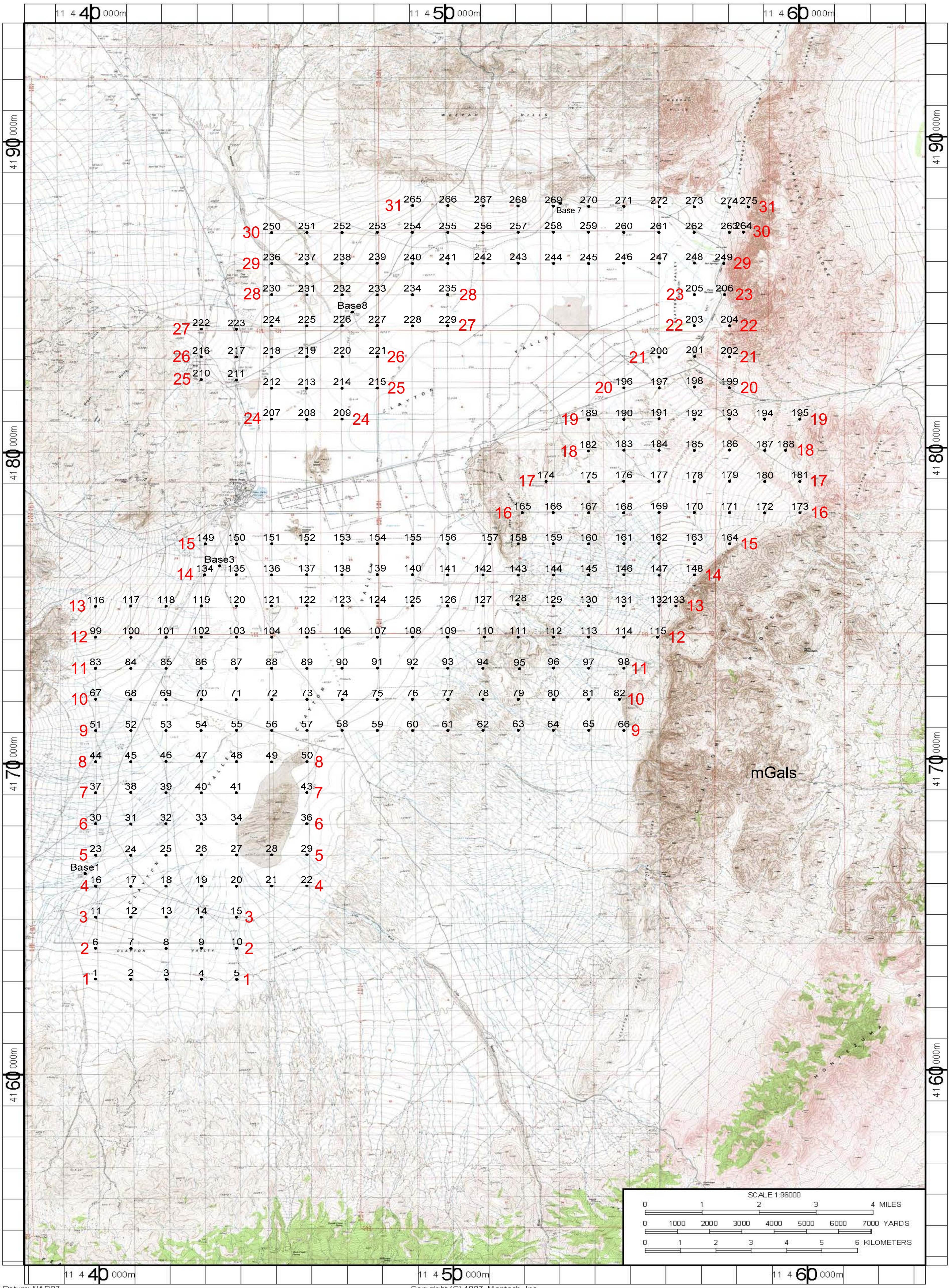
Gravity Survey
Clayton Valley, Nevada

for
Forbes & Manhattan Inc.
65 Queen Street West, Suite 805
Toronto, Ontario M5H 2M5 Canada

by
Hasbrouck Geophysics, Inc.
2473 North Leah Lane
Prescott, AZ 86301 USA

December 15, 2009

Forbes & Manhattan Inc.
Clayton Valley, Nevada, Gravity Survey
Station and Modeling Line Locations



Northing (NAD 27 meters)

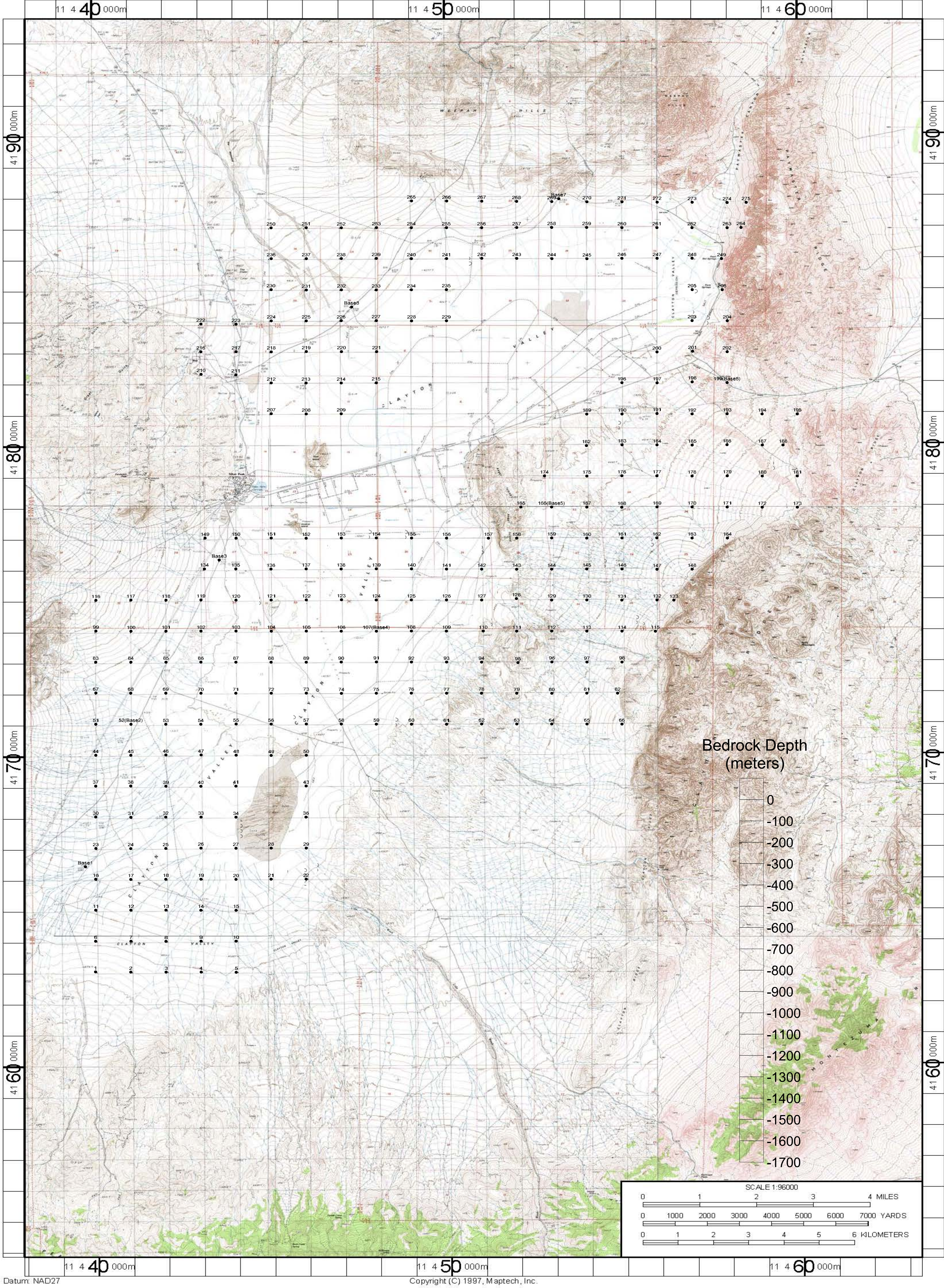
Easting (NAD27 meters)

275
Gravity Station

31
Line

N

Hasbrouck Geophysics, Inc.



Northing (NAD 27 meters)

Easting (NAD27 meters)

Hasbrouck Geophysics, Inc.

275
Gravity Station

N

Appendix 3.

Detailed Gravity Survey

Hasbrouck, 2015a

Detailed Gravity Survey
CV/DB Claims, Nevada

for

Pure Energy Minerals Ltd.
355 Burrard Street, Suite #1780
Vancouver, BC V6C 2G8 Canada

by

Hasbrouck Geophysics, Inc.
12 Woodside Drive
Prescott, Arizona 86305 USA

January 10, 2015

Hasbrouck Geophysics, Inc.
Groundwater, Engineering, Environmental & Mining

I, James C. Hasbrouck, of Prescott, Arizona, hereby certify that:

1. I am a practicing geophysicist and reside at 12 Woodside Drive, Prescott, Arizona, 86305.

2. I am a graduate of the Colorado School of Mines, Golden, Colorado, B. Sc. Geophysical Engineering, 1974.

3. I have practiced in my profession since 1969.

4. I am a licensed Professional Geophysicist in the State of California, number GP1026.

5. I formed Hasbrouck Geophysics, Inc., an Arizona corporation, in 1996 and act as president.

6. I have conducted well over 100 geophysical surveys throughout the world, with an emphasis on the western portion of the United States, for mineral and groundwater exploration targets. Geophysical exploration for Clayton Valley, Nevada, type lithium brine deposits involves a similar approach as when searching for groundwater. Within just the last 20 years I have designed, conducted and interpreted gravity surveys for over 40 groundwater and/or mineral exploration projects. Within the last three years I have designed, conducted and interpreted 12 gravity surveys in the Clayton Valley area for lithium brine exploration. For my first job in geophysics, in 1969 while employed by the U.S. Geological Survey and attending college, I acquired gravity data in Clayton Valley and surrounding areas.

7. I have no interest in, nor do I expect to receive any interest in, the properties or securities of Pure Energy Minerals Ltd.

Dated at Prescott, Arizona this 10th day of January 2015:

James C. Hasbrouck

James C. Hasbrouck, B. Sc. Geophysical Engineering, Professional Geophysicist

12 Woodside Drive
Prescott, Arizona 86305 USA
928-778-6320 (Telephone and Fax)
jim@hasgeo.com
http://www.hasgeo.com

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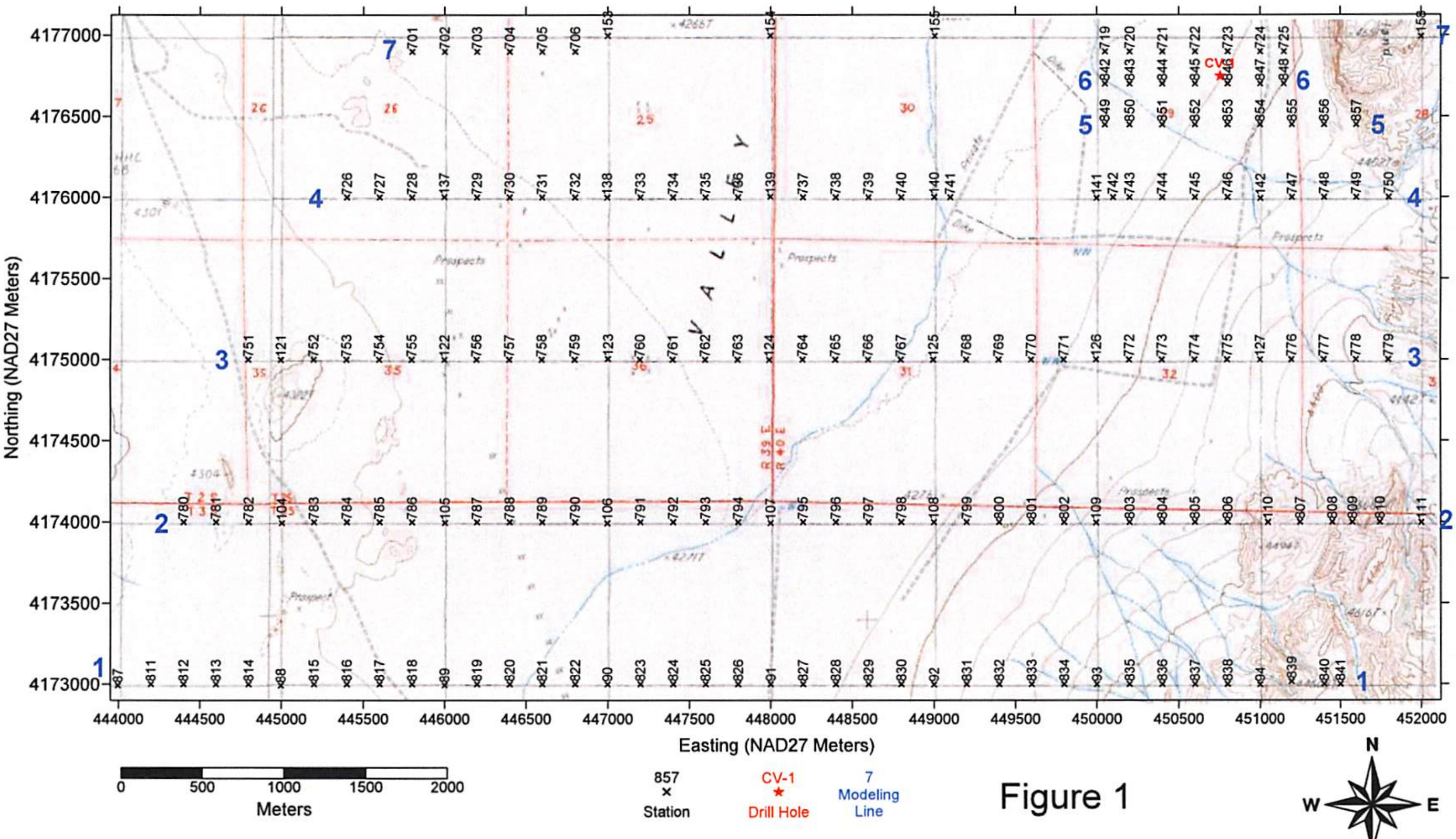


Figure 1

Hasbrouck Geophysics, Inc.

Pure Energy Minerals Ltd.
CV/DB Claims, Nevada, Detailed Gravity Survey
Modeled Bedrock Depth

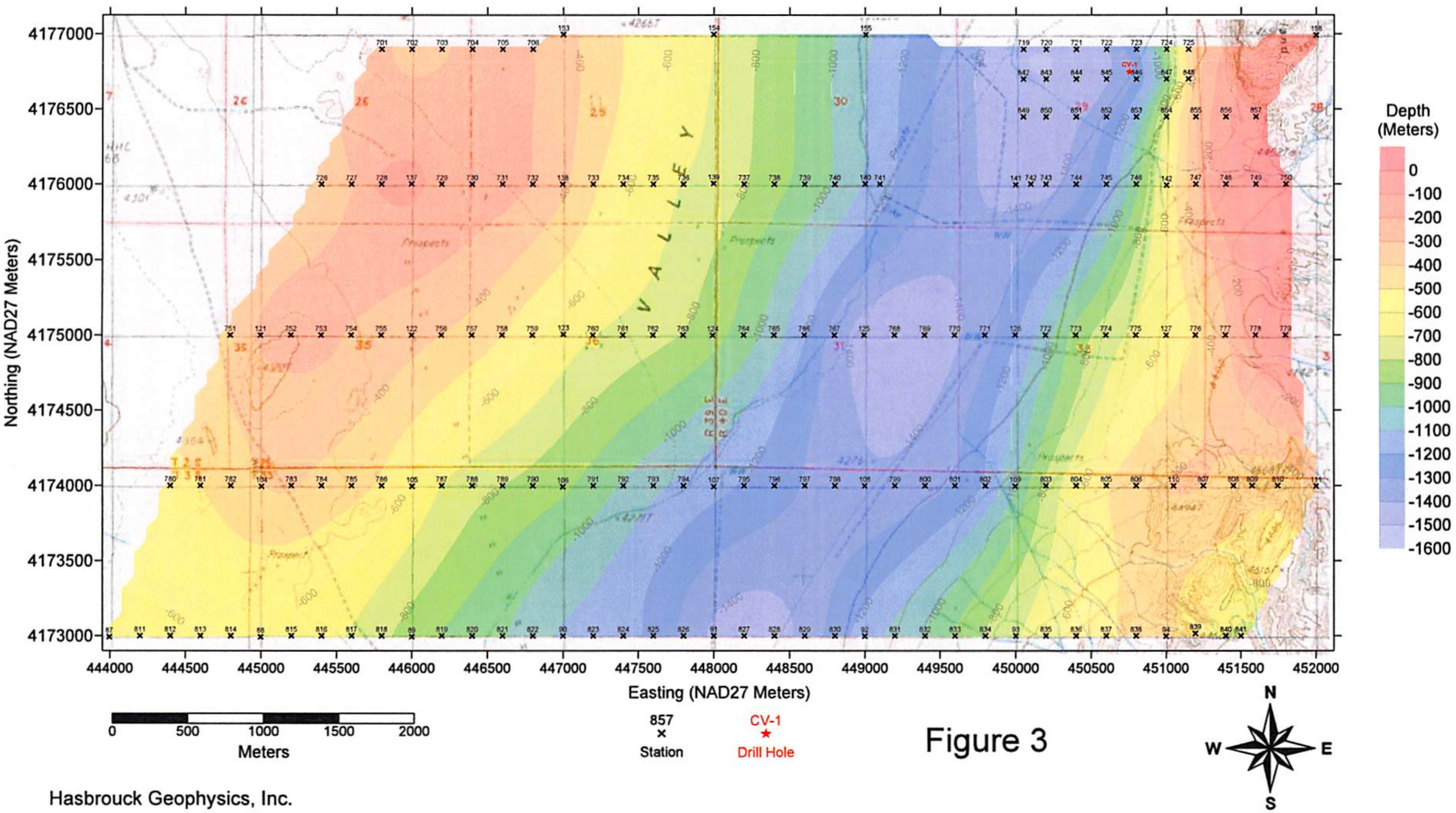
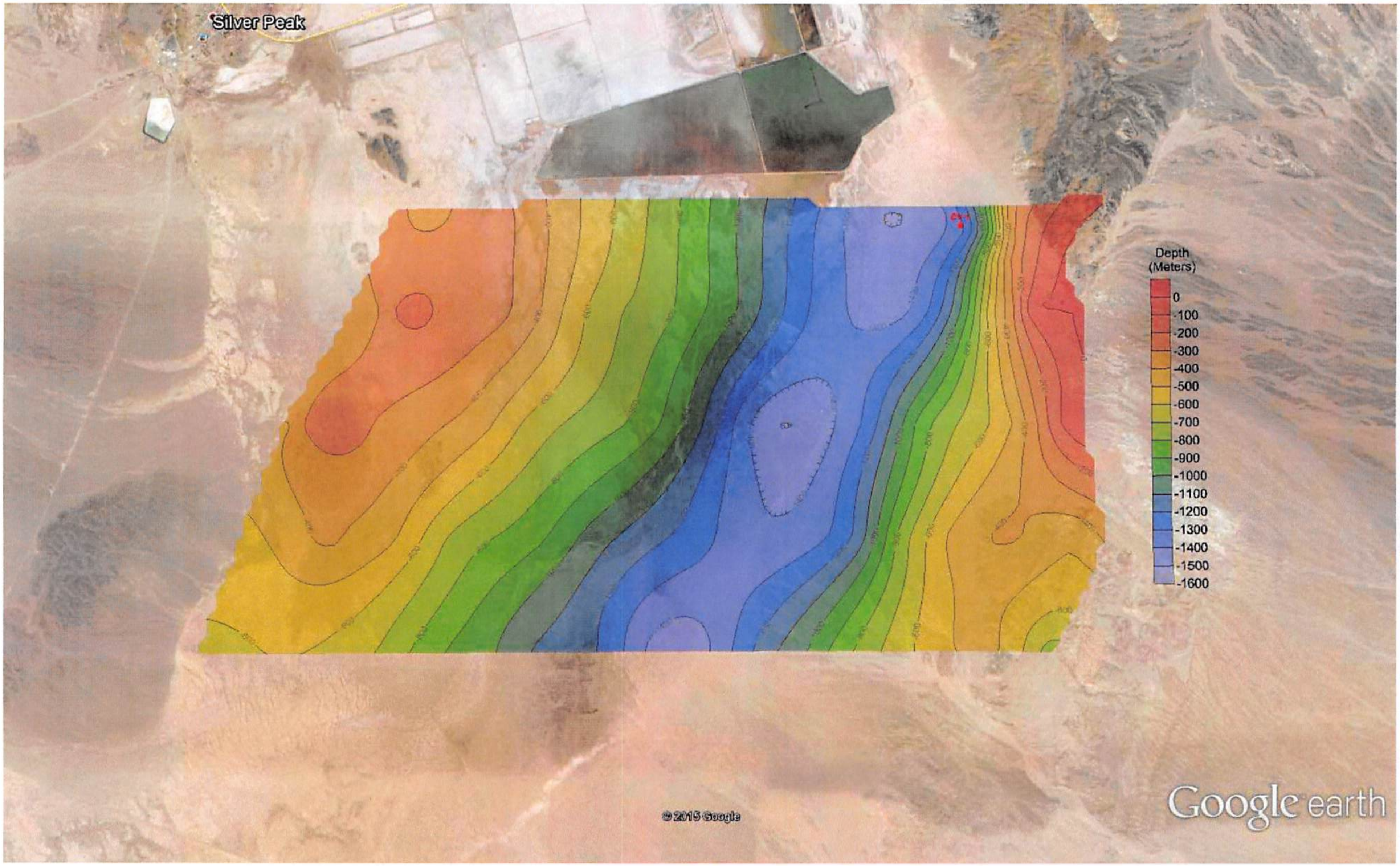


Figure 3

Hasbrouck Geophysics, Inc.

Pure Energy Minerals Ltd.
CV/DB Claims, Nevada, Detailed Gravity Survey
Modeled Bedrock Depth



Hasbrouck Geophysics, Inc.

CV-1
★
Drill Hole

Figure 4

N
W E
S

Appendix 4.

Downhole Geophysics

Southwest Geophysical Services, 2015

Southwest Exploration Services, LLC
borehole geophysics & video services

COMPANY	PURE ENERGY MINERALS		
WELL ID	CB-1		
FIELD	CLAYTON VALLEY		
COUNTY	ESMERELDA	STATE	NEVADA

TYPE OF LOGS: DUAL INDUCTION
MORE: GAMMA - FTC

LOCATION		OTHER SERVICES	
SEC	TWP	RGE	
PERMANENT DATUM		ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL	ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM			G.L.

DATE	12-15-14	TYPE FLUID IN HOLE	BRINE WATER
RUN No	1, 2 & 3	MUD WEIGHT	N/A
TYPE LOG	INDUCTION - GAMMA - FTC	VISCOSITY	N/A
DEPTH-DRILLER	900 FT	LEVEL	~45 FT
DEPTH-LOGGER	770 FT	MAX. REC. TEMP.	22.96 DEG C
BTM LOGGED INTERVAL	770 FT	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.1 FT
DRILLER / RIG#	N/A	LOGGING TRUCK	TRUCK #200
RECORDED BY / Logging Eng.	S. STROUD	TOOL STRING/SN	QL 40-IND # 5911
WITNESSED BY	J. RUD - GEOXPLOR CORP	LOG TIME:ON SITE/OFF SITE	9:00 AM

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	100 FT	12 IN		SURFACE	100 FT
2	?	100 FT	TOTAL DEPTH	4 IN	PVC	SURFACE	TOTAL DEPTH
3							

COMMENTS:

.

Tool Summary:

Date	12-15-14	**Date**	12-15-14	**Date**	12-15-14
Run No.	1	**Run No.**	2	**Run No.**	3
Tool Model	MSI COMBO TOOL	**Tool Model**	MSI QL 40-FTC	**Tool Model**	QL 40-IND
Tool SN	5543	**Tool SN**	5667	**Tool SN**	5911
From	SURFACE	**From**	SURFACE	**From**	100 FT
To	770 FT	**To**	770 FT	**To**	768 FT
Recorded By	S. STROUD	**Recorded By**	S. STROUD	**Recorded By**	S. STROUD
Truck No	200	**Truck No**	200	**Truck No**	200
Operation Check	12-13-14	**Operation Check**	12-13-14	**Operation Check**	12-13-14
Calibration Check	12-8-14	**Calibration Check**	12-13-14	**Calibration Check**	12-13-14
Time Logged	9:25 AM	**Time Logged**	10:30 AM	**Time Logged**	12:00 PM

Date		**Date**		**Date**	
Run No.	4	**Run No.**	5	**Run No.**	6
Tool Model		**Tool Model**		**Tool Model**	
Tool SN		**Tool SN**		**Tool SN**	
From		**From**		**From**	
To		**To**		**To**	
Recorded By		**Recorded By**		**Recorded By**	
Truck No		**Truck No**		**Truck No**	
Operation Check		**Operation Check**		**Operation Check**	
Calibration Check		**Calibration Check**		**Calibration Check**	
Time Logged		**Time Logged**		**Time Logged**	

Additional Comments:

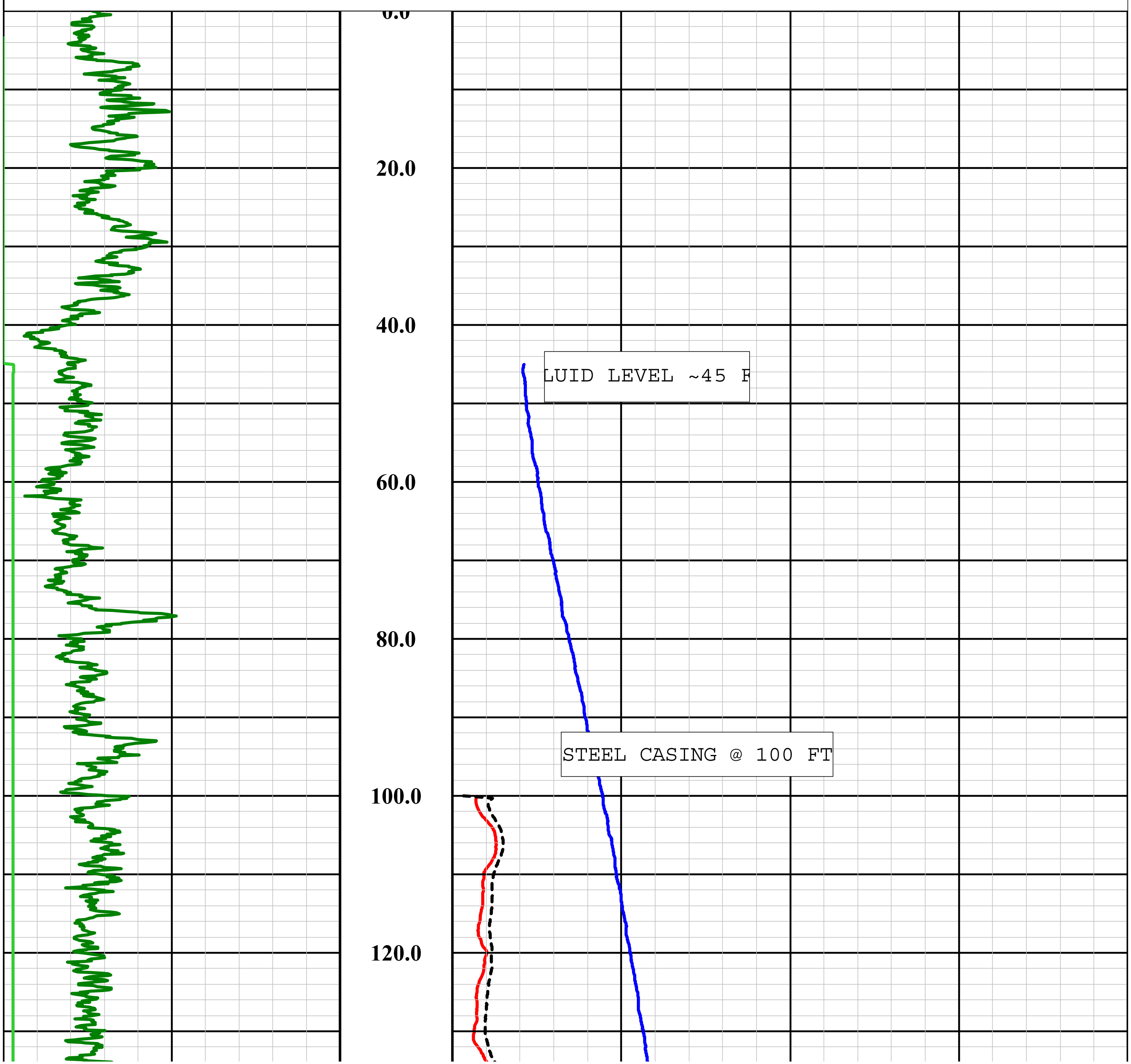
Caliper Arms Used: N/A **Calibration Points:** N/A

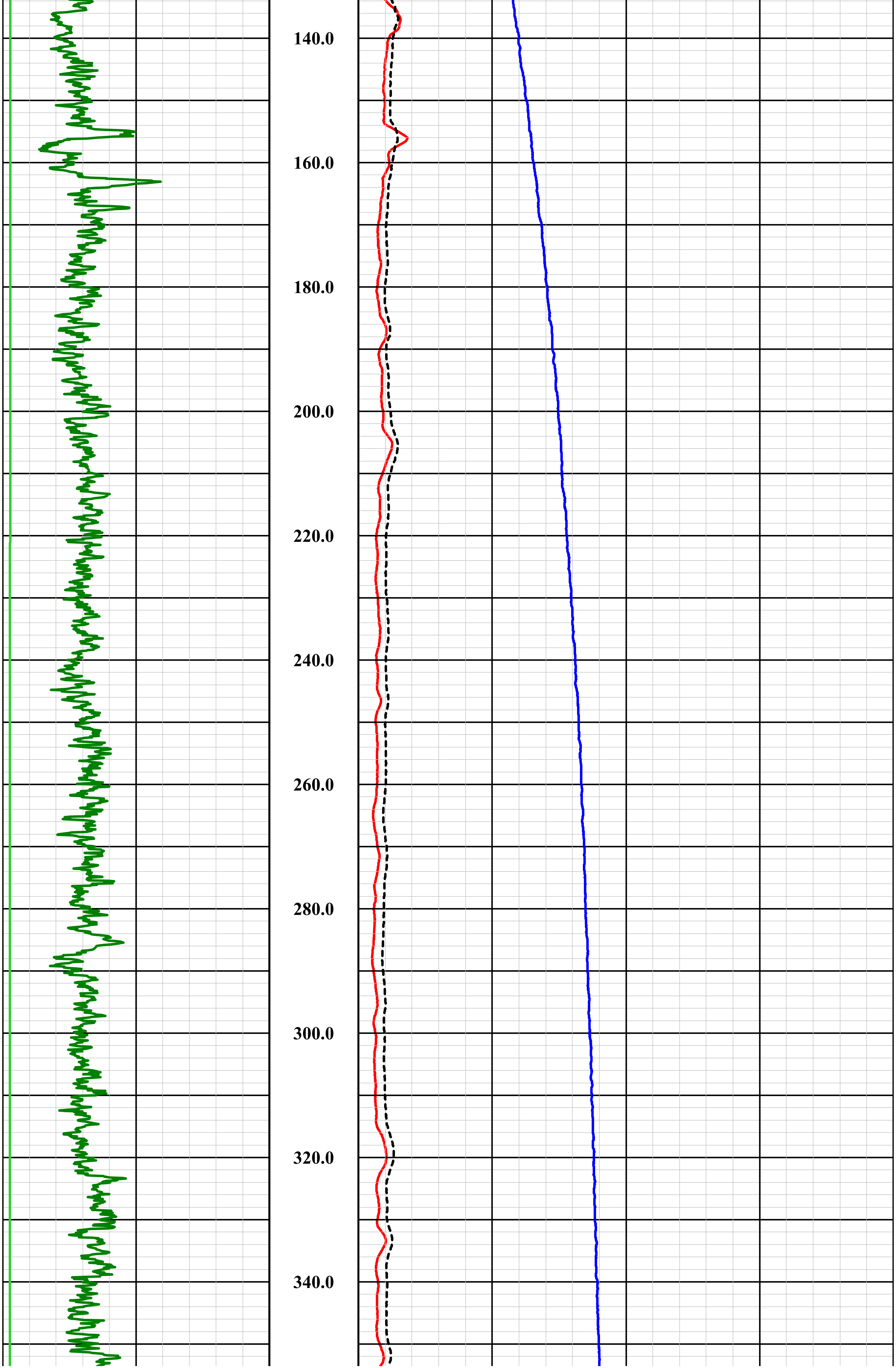
E-Log Calibration Range: N/A **Calibration Points:** N/A

Disclaimer:

All interpretations of log data are opinions based on inferences from electrical or other measurements. We do not guarantee the accuracy or correctness of any interpretations or recommendations and shall not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our employees or agents. These interpretations are also subject to our general terms and conditions set out in our current Service Invoice.

Track 1	Depth	Track 2
Nat. Gamma — 0 API 400	**Depth** 1in:20ft	**Temperature** — 0 Deg C 40
Fluid Conductivity — 0 uS/cm 250000		**Medium Induction** — -100 mS/m 3000
Deep Res — 0 Ohm-m 20		**Deep Induction** — -100 mS/m 3000
Medium Res — 0 Ohm-m 20		

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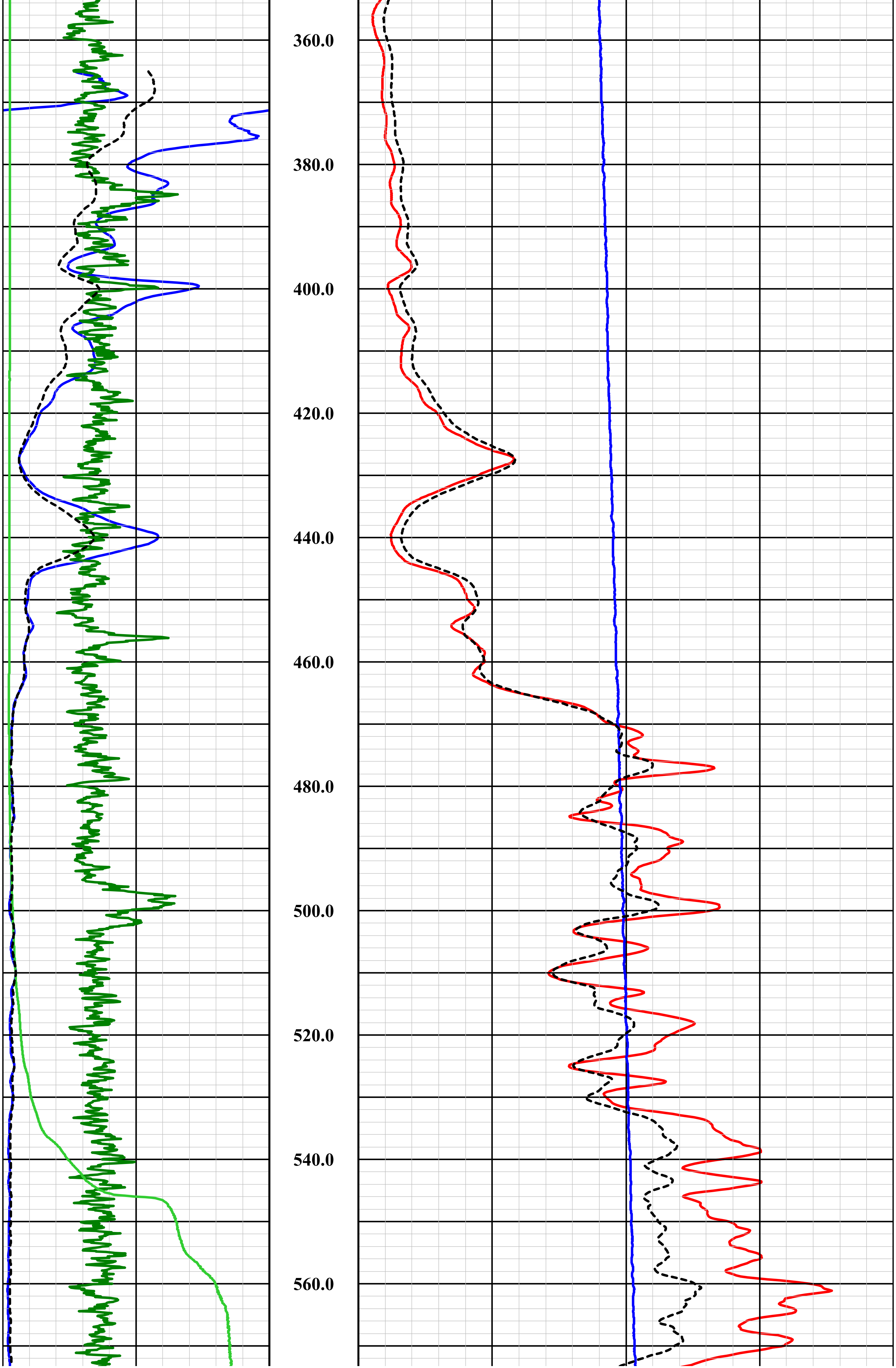
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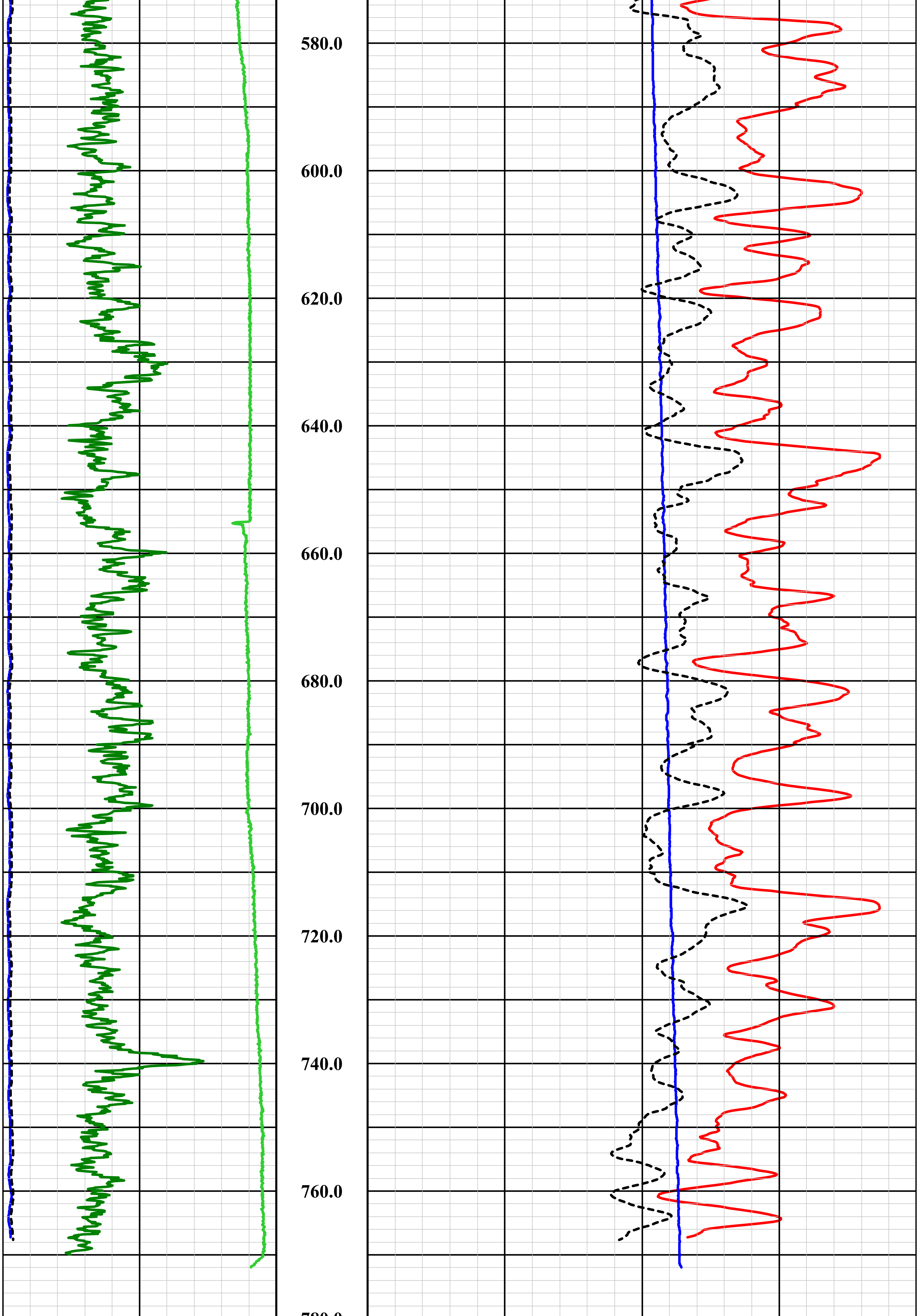

Medium Res

0 Ohm-m 20			
Deep Res 0 Ohm-m 20		**Deep Induction** -100 mS/m 3000	
Fluid Conductivity 0 uS/cm 250000		**Medium Induction** -100 mS/m 3000	
Nat. Gamma 0 API 400	**Depth** 1in:20ft	**Temperature** 0 Deg C 40	

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	PURE ENERGY MINERALS
Well	CB - 1
Field	CLAYTON VALLEY
County	ESMERALDA
State	NEVADA

Final Dual Induction Summary

Appendix 5.

Seismic Reflection Survey

Hasbrouck, 2015b

Reflection Seismic Survey
Clayton Valley, Nevada

for
Pure Energy Minerals Ltd.
355 Burrard Street, Suite #1780
Vancouver, BC V6C 2G8 Canada

by
Hasbrouck Geophysics, Inc.
12 Woodside Drive
Prescott, Arizona 86305 USA

May 12, 2015

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ADDITIONAL PLOTS AND DATA

INTRODUCTION

This report presents the results of a reflection seismic survey conducted for lithium brine exploration over portions of Pure Energy Minerals Ltd.'s claims and other claims in Clayton Valley in west-central Nevada. In conjunction with gravity data acquired in 2009 and December 2014, the reflection seismic survey will help define the shape of the basin, map the dip, continuity and extent of aquifer units, map structures within the aquifers and bedrock, and possibly provide constraints for gravity modeling.

METHODOLOGY

Refer to Appendix A for a description on the methodology of reflection seismic surveying.

DATA ACQUISITION

A total of 19.897 km (12.363 miles) of seismic reflection data were acquired by Bird Seismic Services, Inc., Globe, Arizona, with design and in-field supervision provided by Jim Hasbrouck of Hasbrouck Geophysics, Inc., Prescott, Arizona, along two lines, as seen in Figure 1 and detailed in Table 1 below. The data were acquired with a Seistronix *EX-6* signal-enhancement seismograph configured with 600 live channels along line 1 and 300 along line 2, 3.0 seconds record lengths, 1.0 millisecond (ms) sampling intervals, Sunfull PS-14B 14-Hz vertical geophones with four per string, geophone intervals of 6.1 meters (20 feet), and source points between each geophone. A United Service Alliance AF-450 nitrogen gas accelerated weight-drop seismic source with a 208 kilogram weight was used along the entire lengths of both lines. The AF-450 source was mounted on an 8-ton 4x4 truck and consisted of a ram that was lifted against a self-contained nitrogen gas spring and then released thus resulting in a drop force much greater than the actual weight of the ram. After initial in-field testing, data for each source point were stacked four times. Each geophone location and elevation along the lines was surveyed by Jim Ranke of Matrix Surveys, Inc., Denver, Colorado, using a Leica System 1200 real time kinematic (RTK) differential global positioning system (DGPS) capable of sub-centimeter horizontal and vertical accuracy.

Table 1: Data Acquisition Details

Line	Length	Number of Geophones	Nominal CDP Fold	Rolled
1	18.068 km / 11.227 miles	600	300	Yes
2	1.829 km / 1.136 miles	300	150	No

Overall the quality of the reflection seismic data is considered excellent. Intermittent wind noise was present, but all of the geophones were buried approximately 5 to 10 cm and covered with dirt to minimize any adverse effects. Along small portions of the northern end of line 1 there was some noise generated by limited drilling activity at drill hole CV-1, but the noise was essentially eliminated during processing. During acquisition of the seismic data along line 2 the drilling at CV-1 was much more pronounced (i.e., the hole was being expanded and drilled through existing PVC casing), therefore seismic data were acquired in the late evening when only a mud pump was operating at the drill site and thus the quality of the data was not adversely affected.

Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line and Station Locations

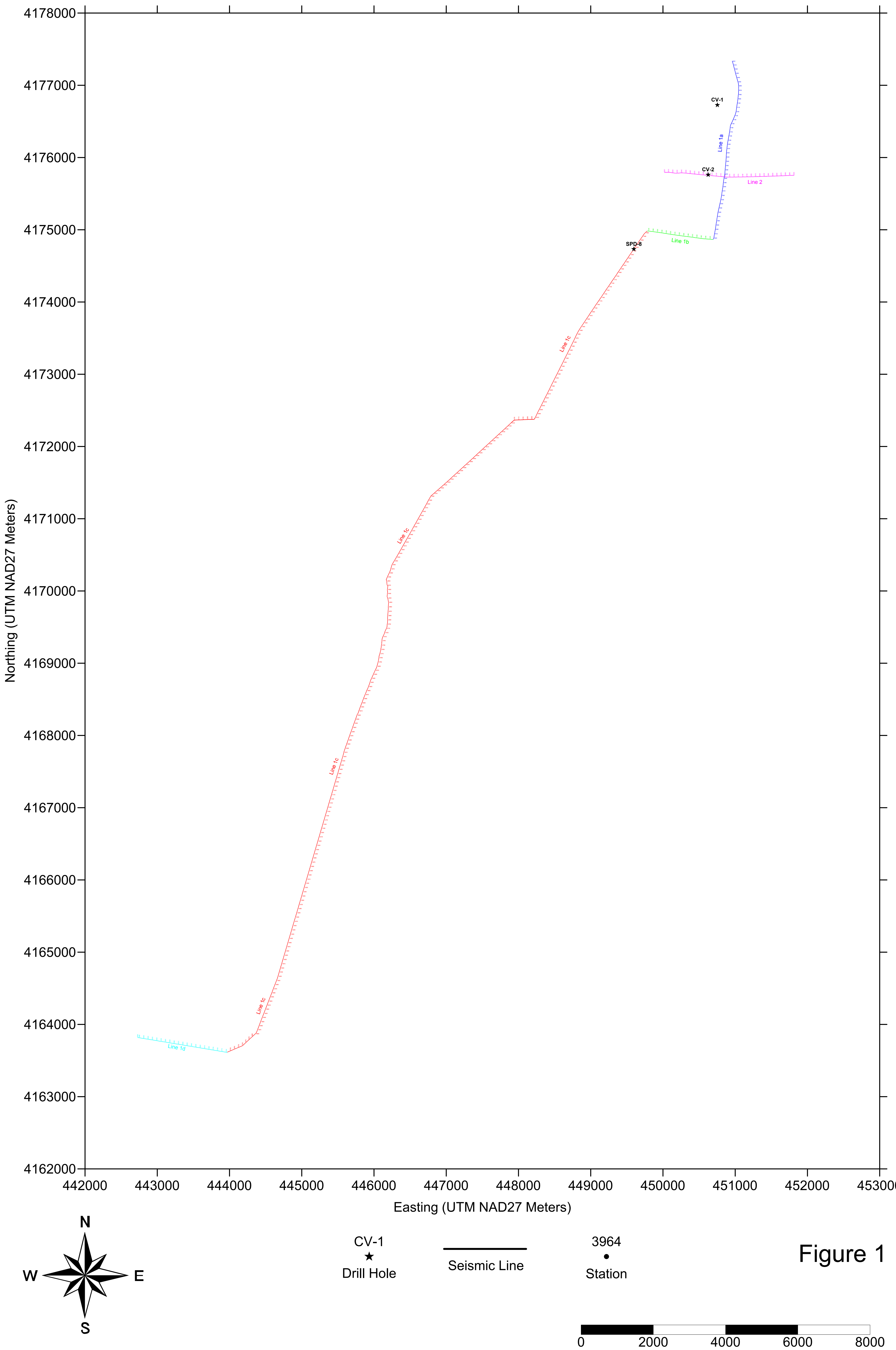


Figure 1

Hasbrouck Geophysics, Inc.

Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #2 Time Section with Interpretation and Estimated Depths

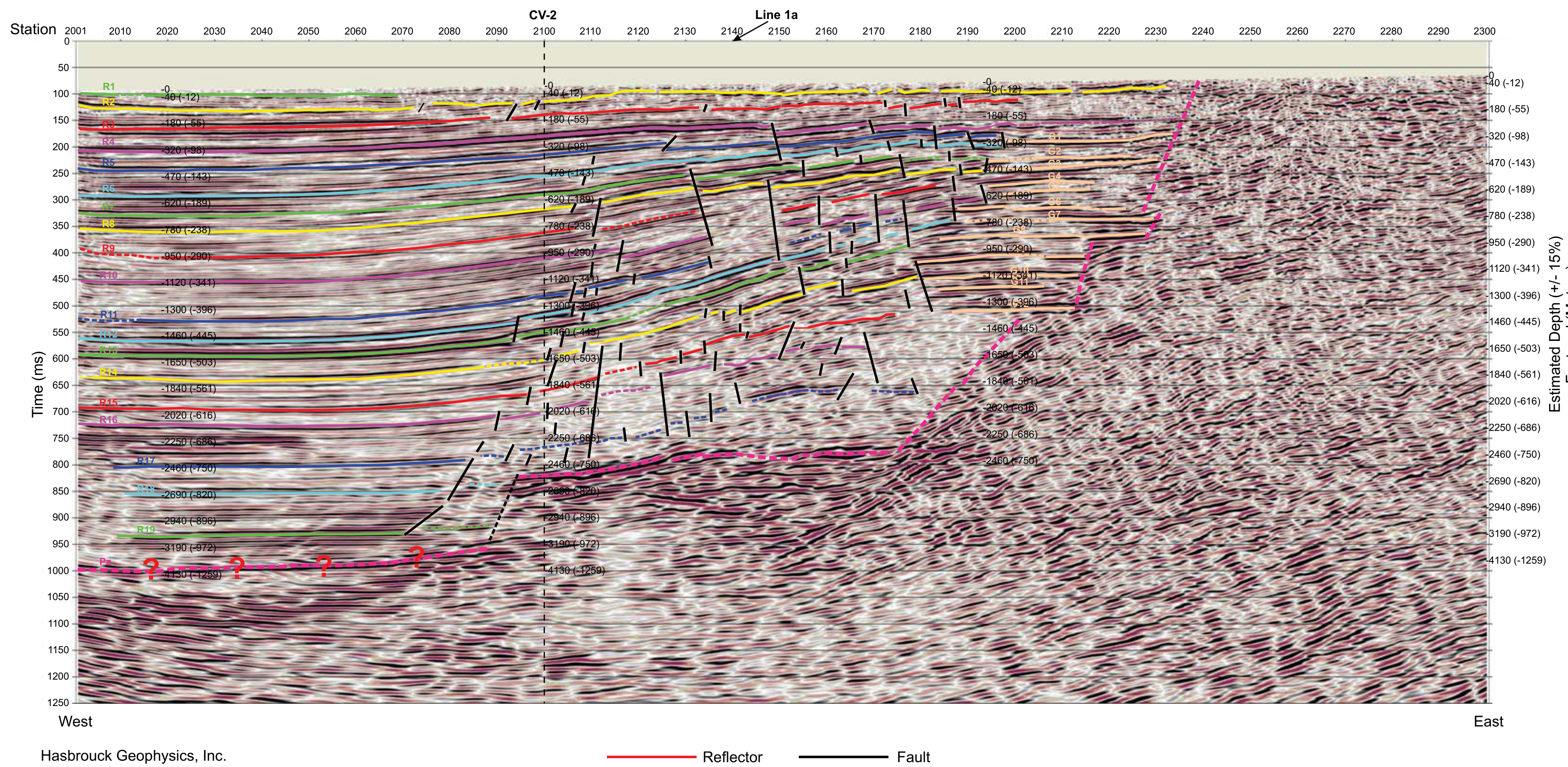


Figure 4

Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1b Time Section with Interpretation and Estimated Depths

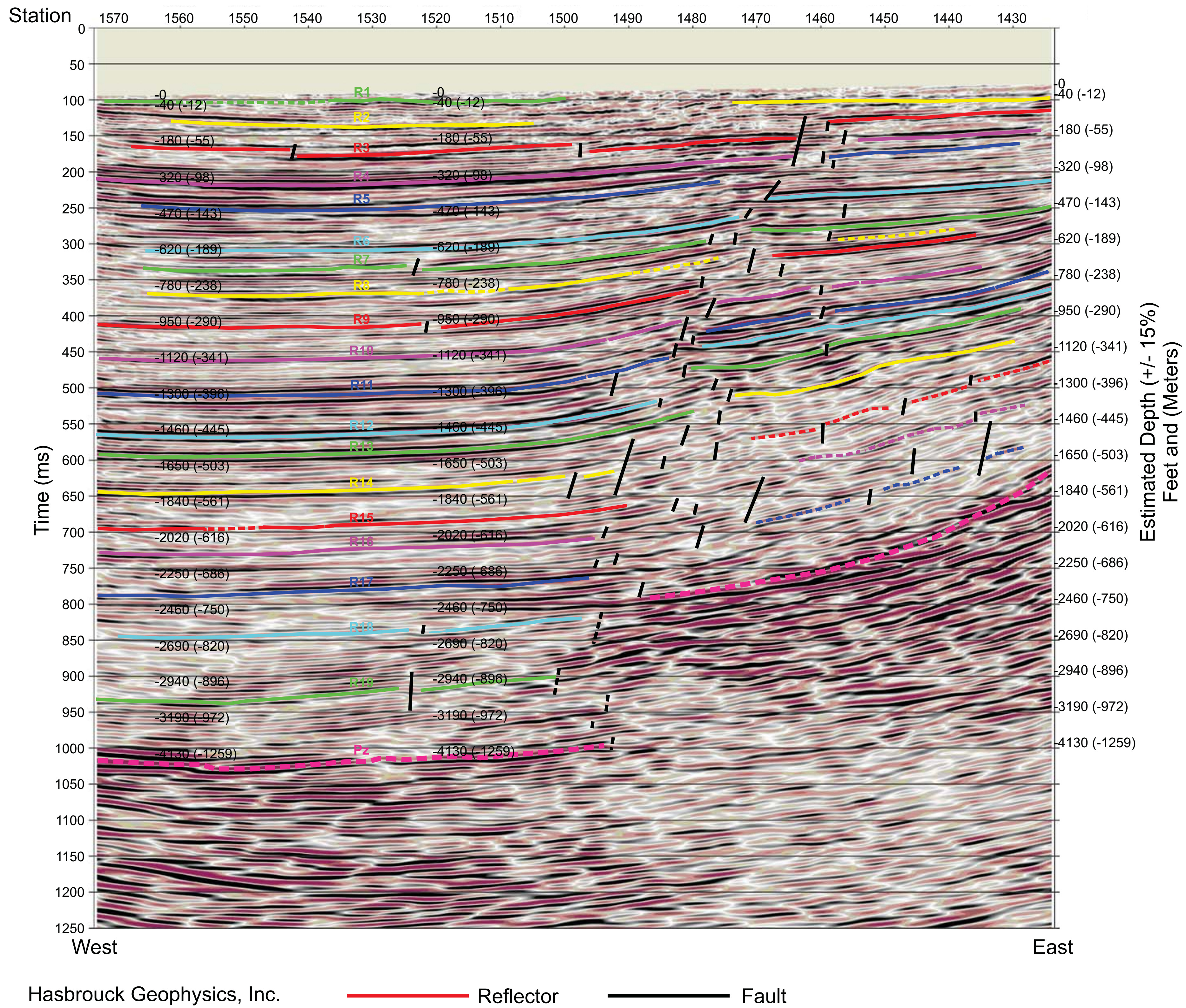
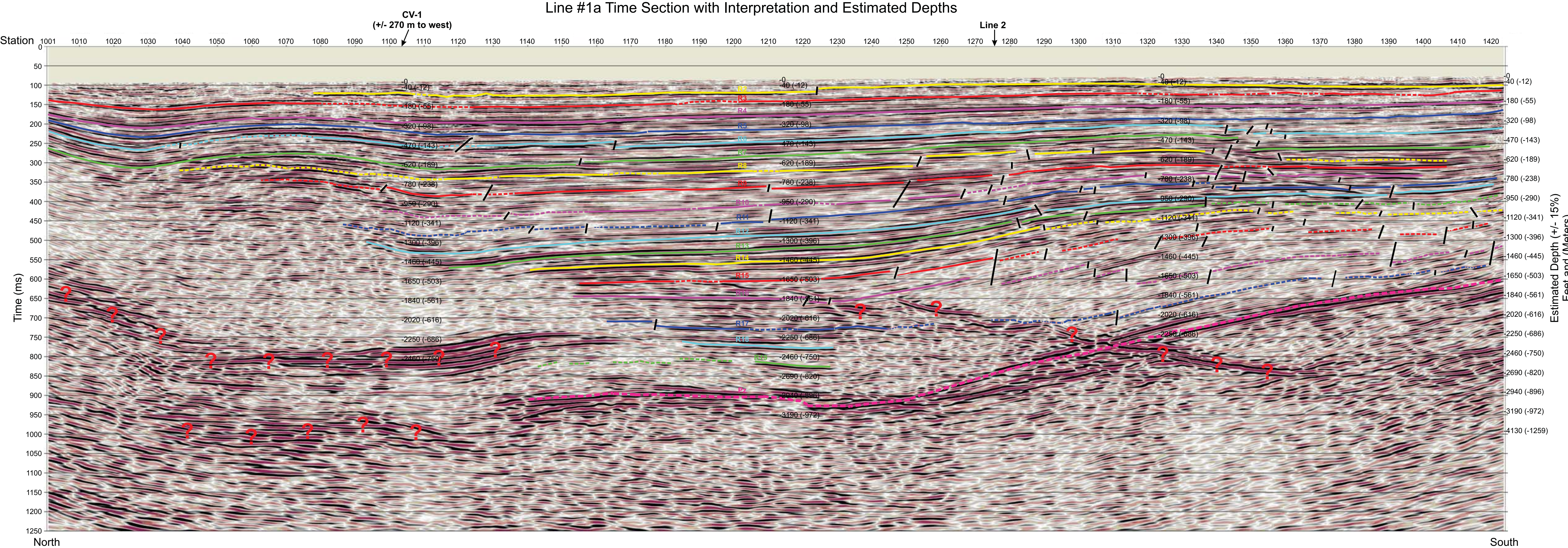


Figure 6

Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1a Time Section with Interpretation and Estimated Depths

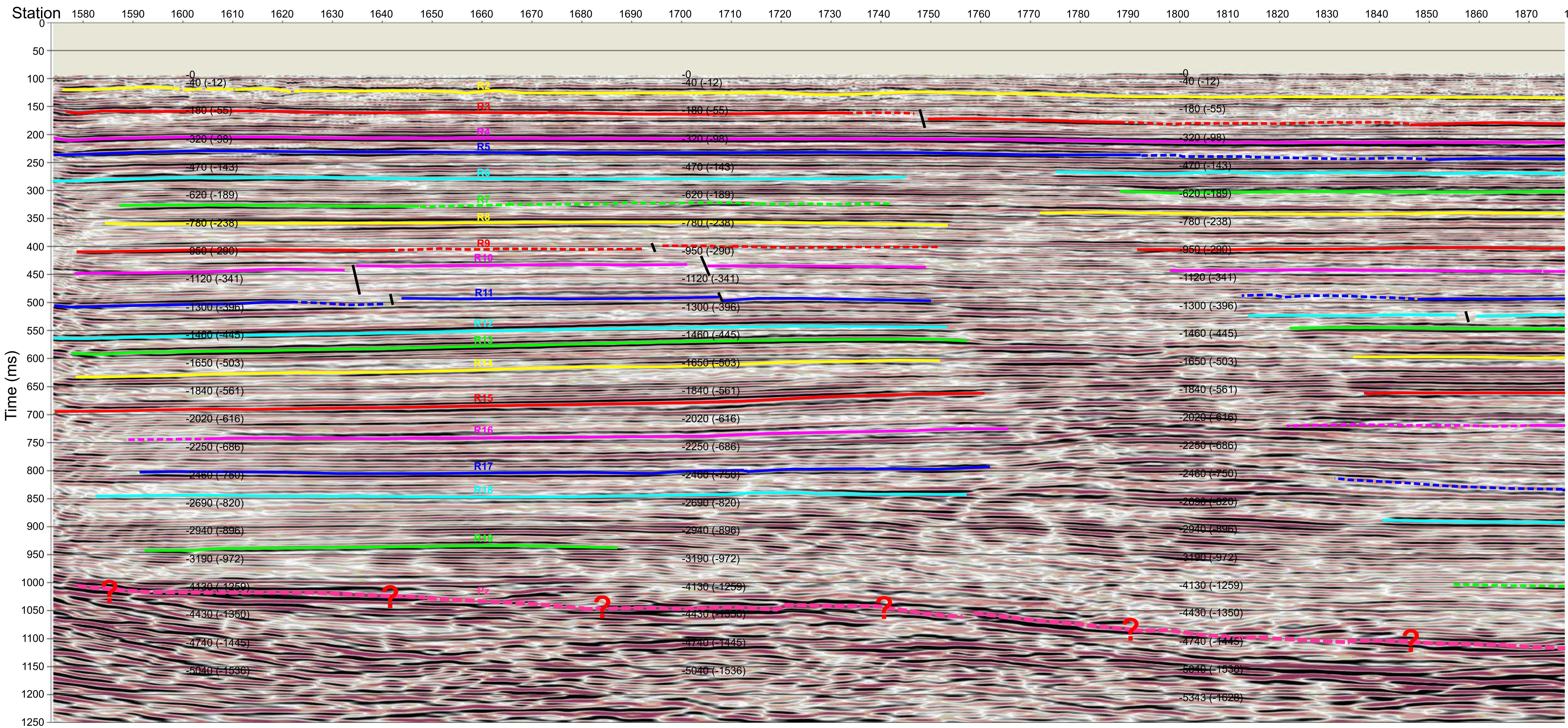


Hasbrouck Geophysics, Inc.

Reflector
Fault

Figure 7

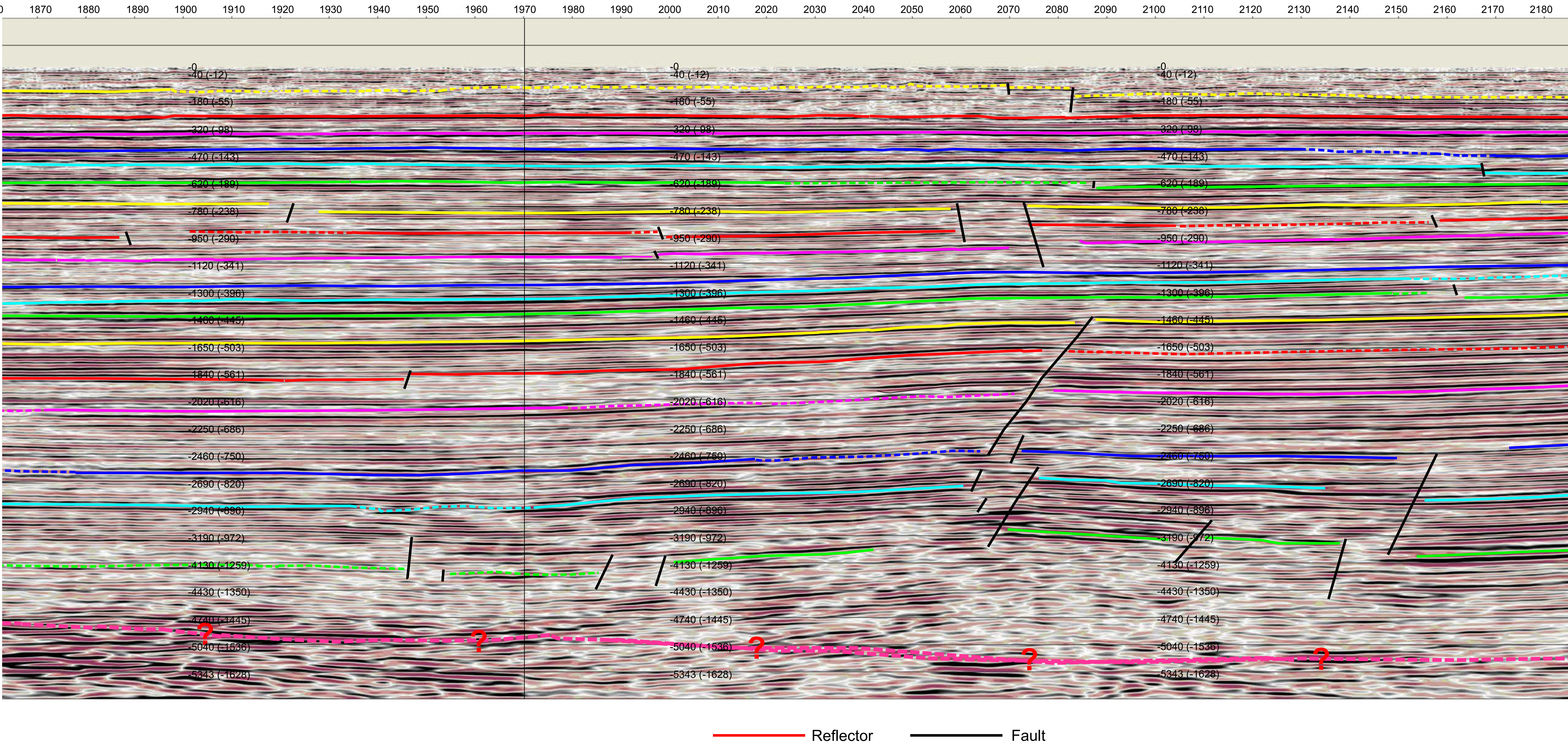
Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1c Time Section with Interpretation and Estimated Depths (Part 1)



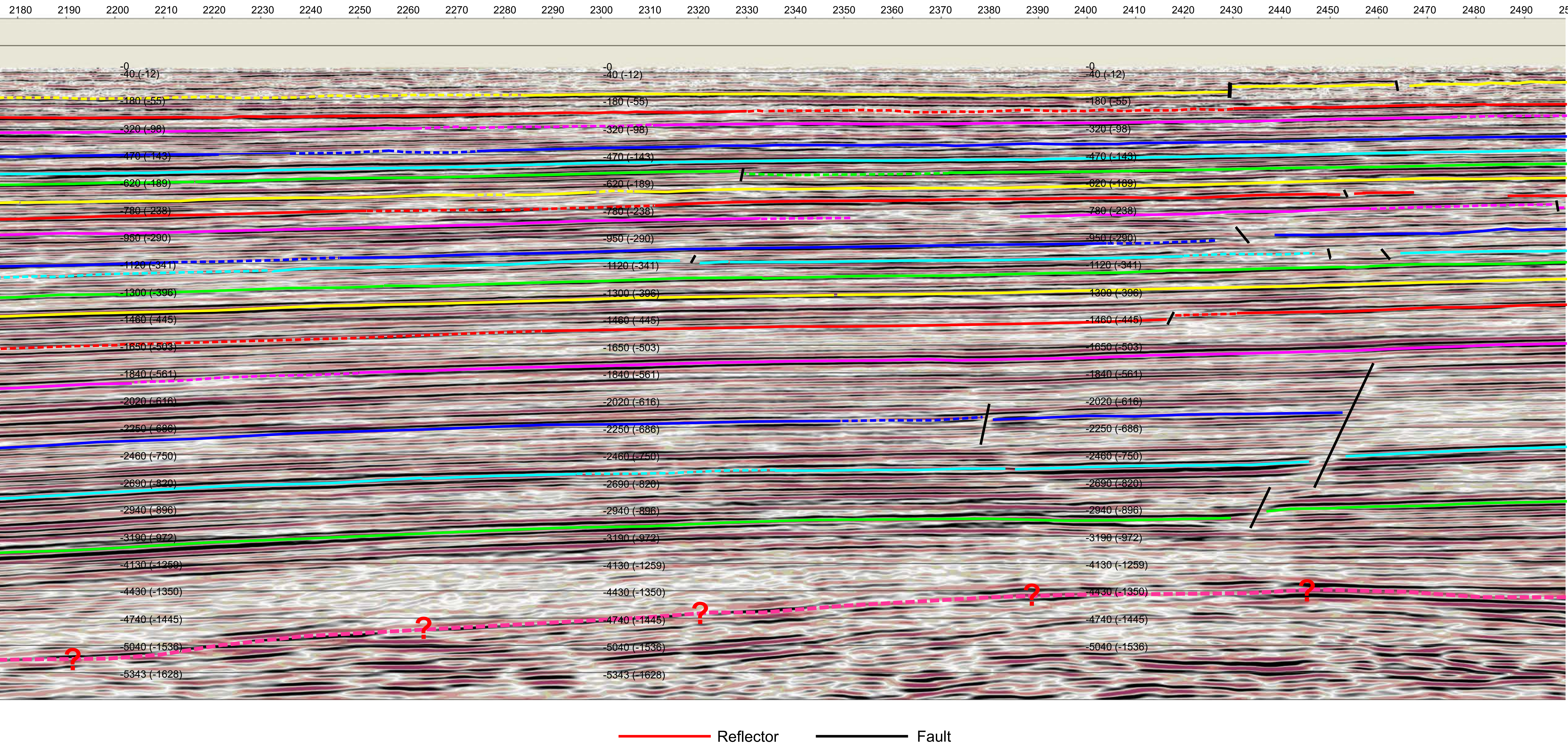
Hasbrouck Geophysics, Inc.

Reflector Fault

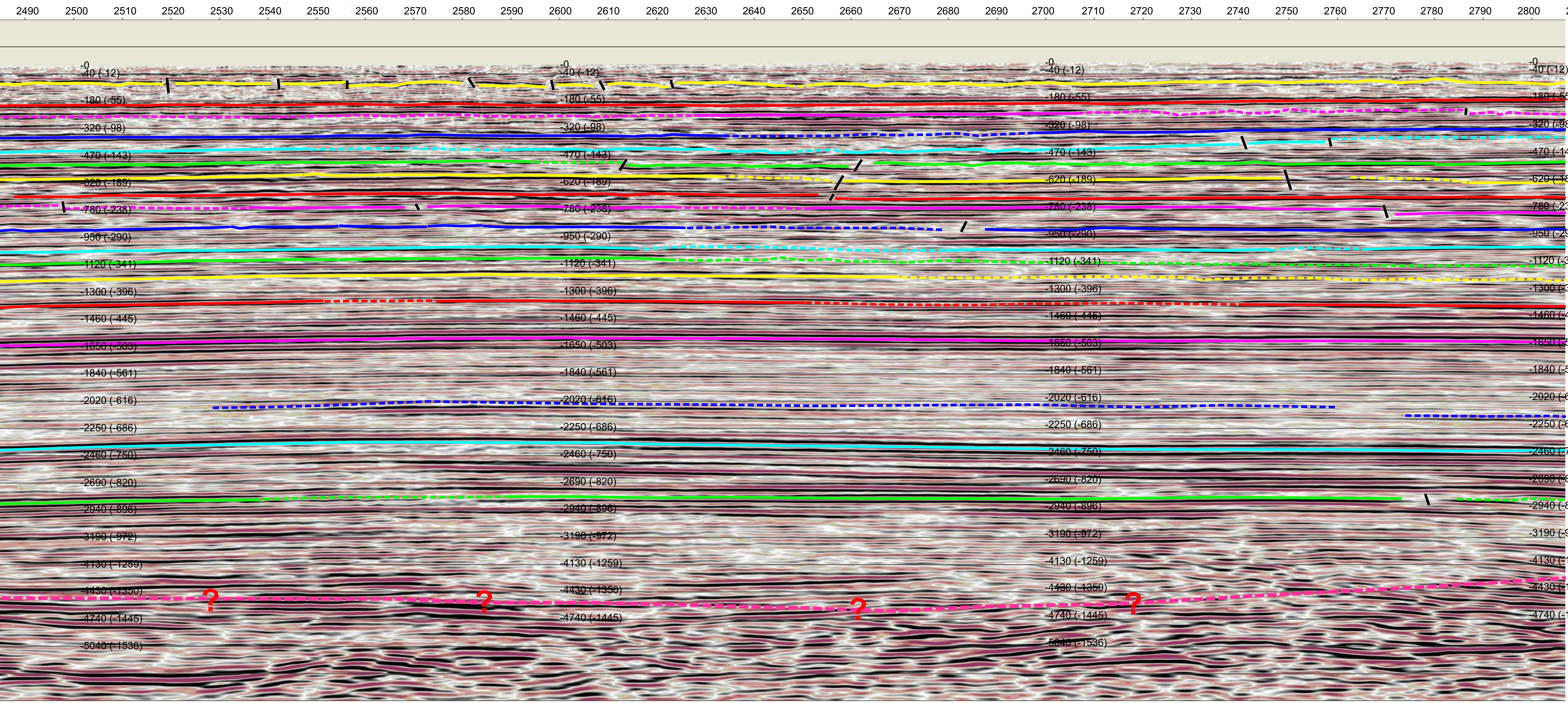
Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1c Time Section with Interpretation and Estimated Depths (Part 2)



Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1c Time Section with Interpretation and Estimated Depths (Part 3)

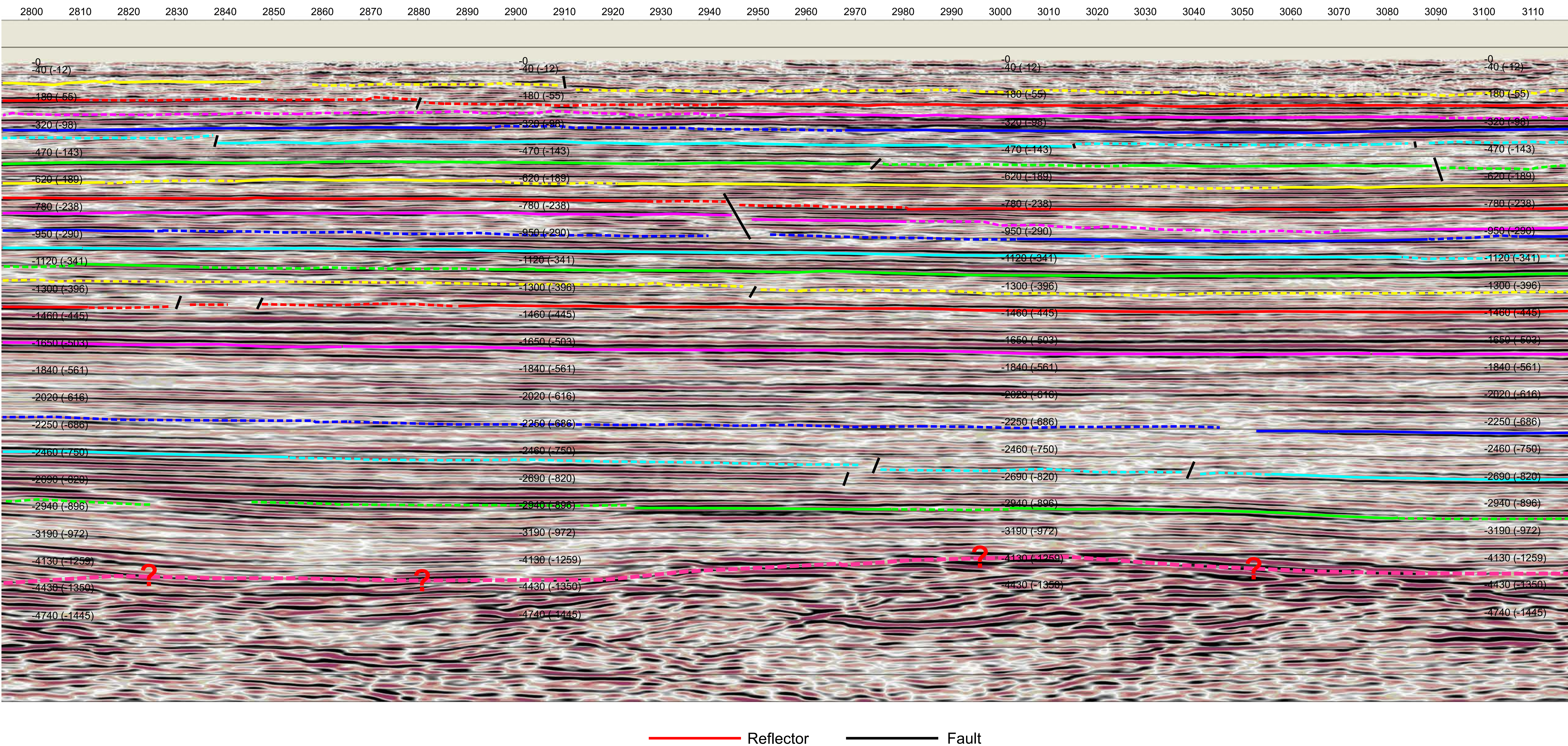


Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1c Time Section with Interpretation and Estimated Depths (Part 4)

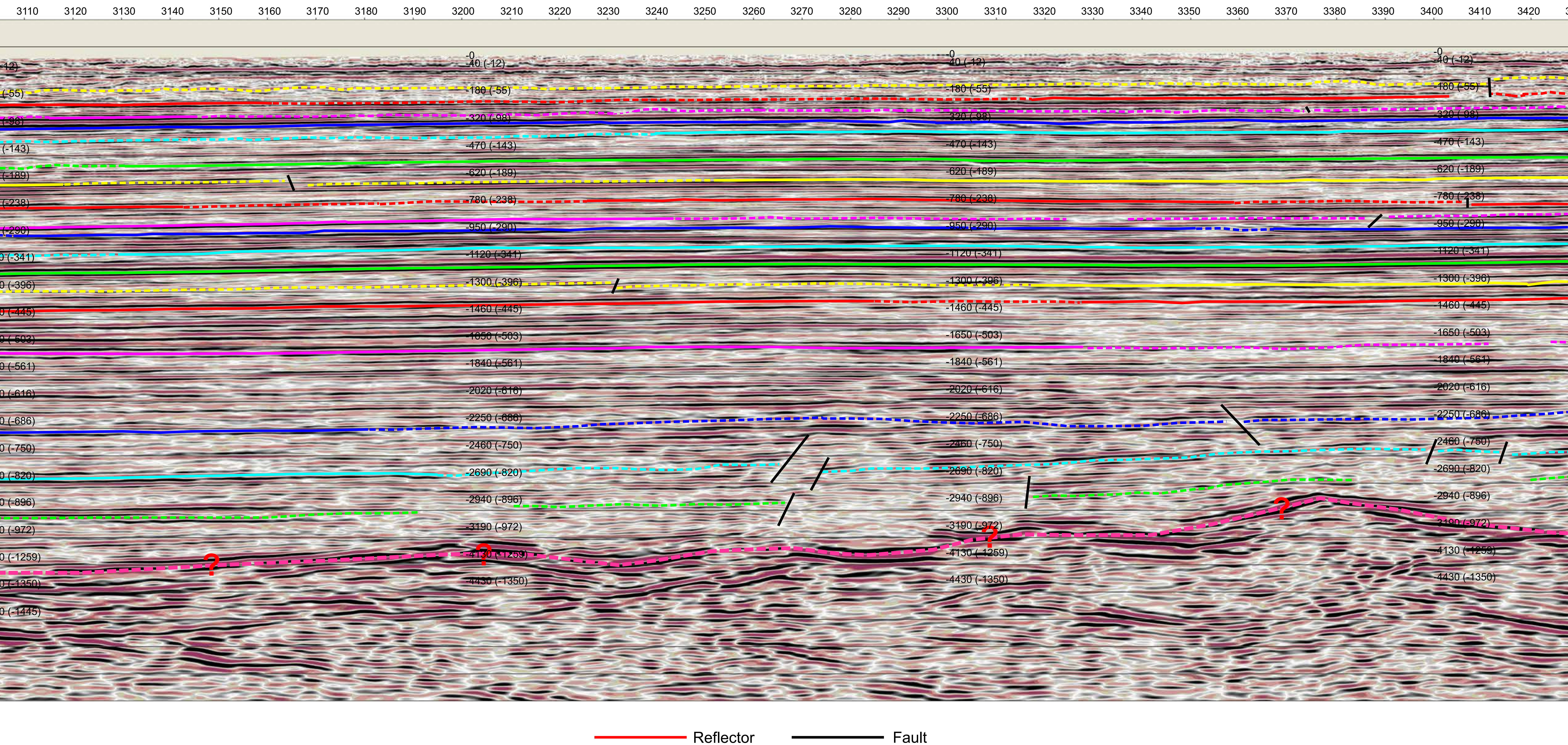


Reflector
Fault

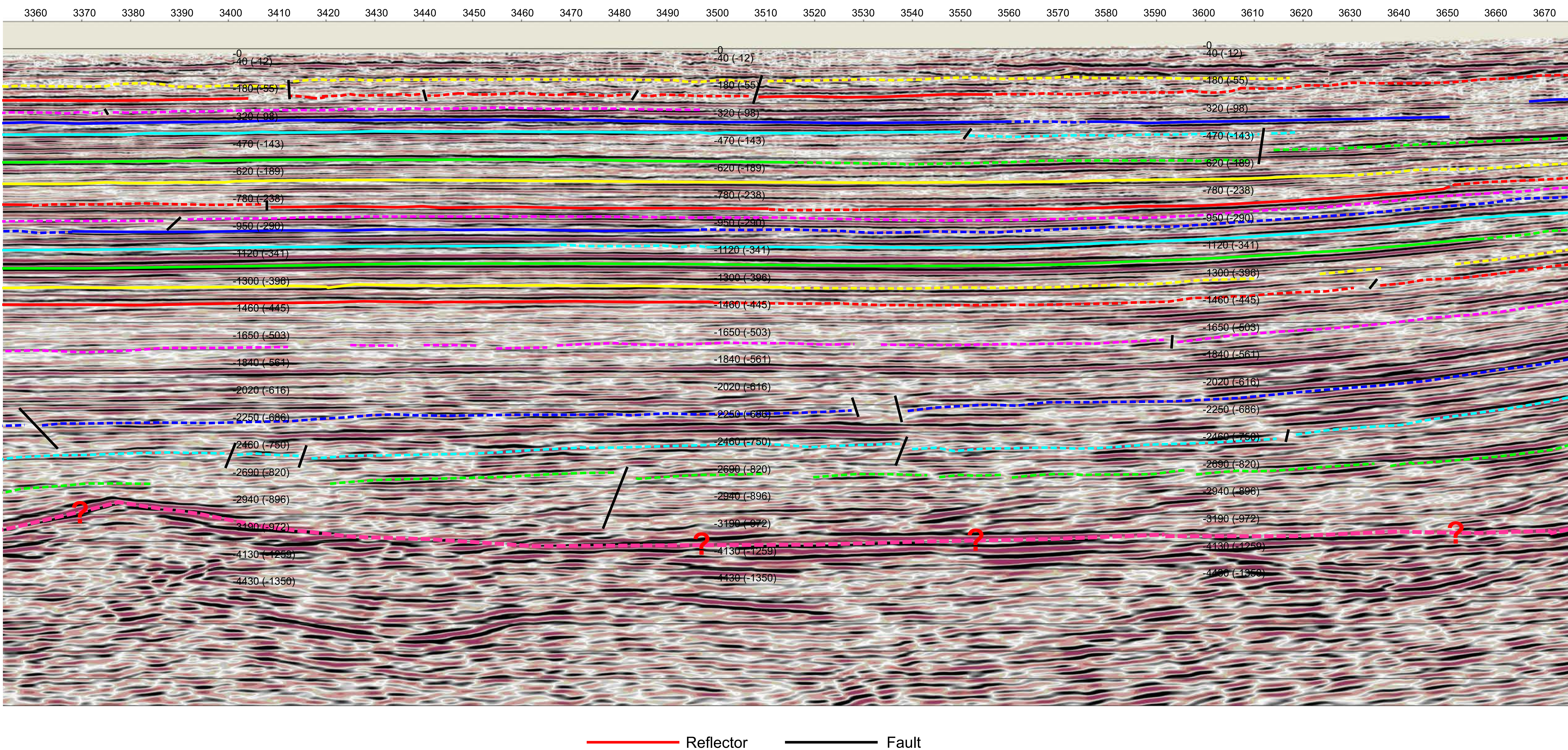
Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1c Time Section with Interpretation and Estimated Depths (Part 5)



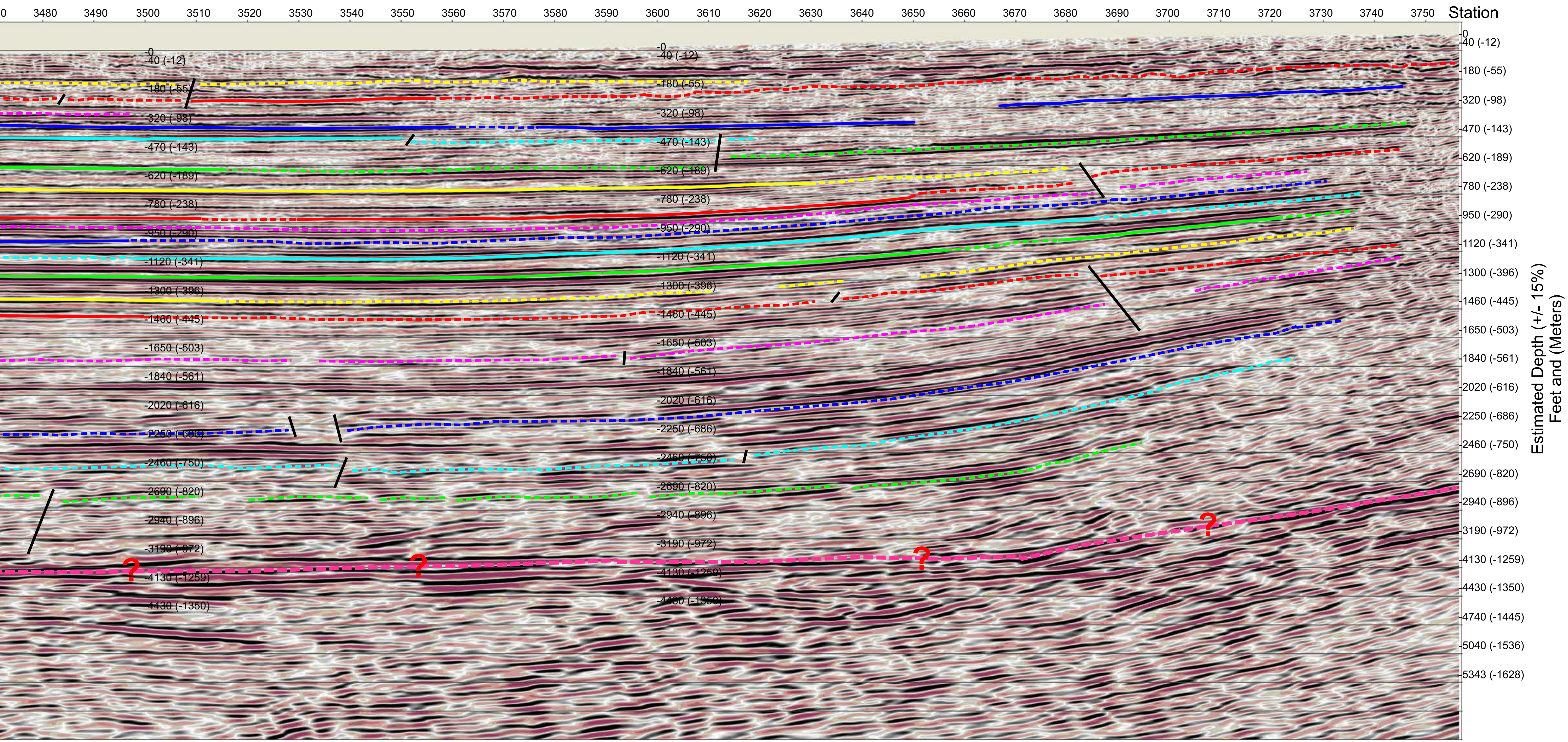
Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1c Time Section with Interpretation and Estimated Depths (Part 6)



Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1c Time Section with Interpretation and Estimated Depths (Part 7)



Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1c Time Section with Interpretation and Estimated Depths (Part 8)



Reflector Fault

Pure Energy Minerals Ltd.
Clayton Valley, Nevada, Reflection Seismic Survey
Line #1d Time Section with Interpretation and Estimated Depths

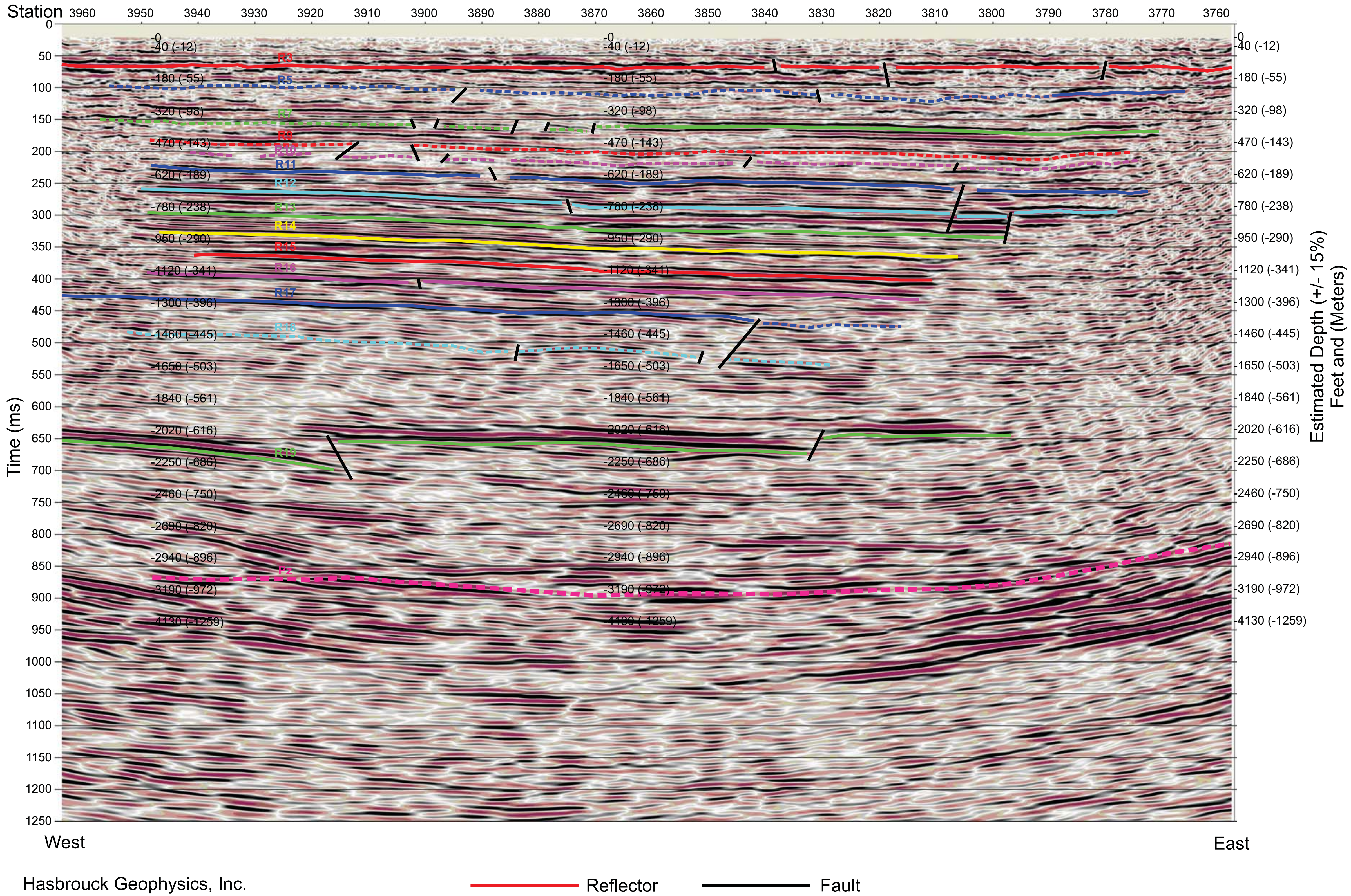


Figure 11

Appendix 6.

Pumping Test Data

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY
Suite 800 - 1045 Howe Street, Vancouver, BC Canada V6Z 2A9
Telephone (604) 684-5900 Fax (604) 684-5909

BGC Project Memorandum

To:	**PureEnergy Minerals**	**Doc. No.:**	**n/a**
Attention:	**Dr. Andy Robinson, Chief Operating Officer**	**cc:**	
From:	**Davan Russell; Geoff Dickinson**	**Date:**	**June 12, 2015**
Subject:	**Pumping Test Results - DRAFT**		
Project No.:	**1487-001**		

1.0 INTRODUCTION

PureEnergy Minerals (PureEnergy) is in the preliminary stages of the evaluation of a potential lithium resource in Clayton Valley, Nevada. The concept is to pump brine that contains lithium to the surface and to separate the lithium from the brine. Limited information is presently available regarding subsurface conditions. As part of the preliminary site assessment, PureEnergy converted a previous exploration borehole to a test well, the objective being to obtain an initial estimate of hydraulic properties to permit the design, installation, and testing of additional wells at other locations on the lease for lithium extraction purposes.

At the request of PureEnergy, BGC Engineering Inc. (BGC) has provided analysis of the pumping tests completed by PureEnergy between April 1 and April 3, 2015 (Broadbent 2015, Appendix A). The purpose of the pumping tests was to predict the characteristics of the aquifer to allow design of a production well or wellfield that will be used to obtain water for extraction of lithium. In addition, Black Eagle Consulting Inc. (Appendix B) measured grain size distribution for three samples from borehole CV-3 (CV-3 570.0’, CV-3 940.0’, and CV-3 Comb. 580.0’), and measured physical parameters for a remolded sample combined from two CV-3 samples (CV-3 580-590 and CV-3 590-598).

This memorandum describes the findings of the analysis.

2.0 METHODS

BGC was not involved in the execution of the pumping tests but provided some general guidelines for completion of step and constant rate pumping tests (BGC to PureEnergy dated March 3, 2015). An excerpt of these guidelines are provided here for information.

2.1. Step Test

The purpose of a step test is to evaluate specific well capacity (defined as the incremental drawdown for a given pumping rate) and to establish an appropriate constant rate for a pumping test. The general method is as follows:

1. Choose four steps, approximately 25%, 50%, 75%, and 100% of the pump capacity or estimated maximum well yield (e.g., 75, 150, 225, and 300 GPM).
2. Program and install the pressure transducer above the pump intake and below the lowest anticipated water level. Monitor water levels on a 5 to 10 second interval to capture the initial water level changes when the pumping rate is changed.
3. Record the beginning flow meter totalizer value. Periodically record instantaneous and total flow throughout the step test.
4. Record the initial non-pumping water level. Throughout the test, manually monitor groundwater levels at a 30-second interval near the beginning of each step, and at a 60-second interval for the duration of each step.
5. Begin pumping at the lowest rate and maintain constant rate for 60 minutes.
6. Quickly increase to the second-lowest rate and maintain constant rate for 60 minutes.
7. Quickly increase to the second-highest rate and maintain constant rate for 60 minutes.
8. Quickly increase to the highest rate and maintain constant rate for 60 minutes.
9. Shut off the pump and monitor recovery for a minimum of 4 hours.
10. Analyze the step test results and choose an appropriate constant rate for the pumping test.

2.2. Constant-Rate Pumping Test

The primary purpose of a constant rate pumping test is to estimate aquifer transmissivity. Pumping tests, particularly those of longer duration, may also reveal hydraulic boundaries and provide an indication of aquifer heterogeneity. The general method is as follows:

1. Choose a constant pumping rate based on the step test results. Confirm the rate is less than approximately 90% of the wide-open pump capacity to allow for adjustments as water levels decline over the course of the test.
2. If required, program and install the pressure transducer above the pump intake and below the lowest anticipated water level. Monitor water levels on a 5 to 10 second interval to capture the initial water level changes when the pumping rate is changed. The data logger already be set up from the step test.
3. Record the beginning flow meter totalizer value. Periodically record instantaneous and total flow throughout the constant-rate pumping test.
4. Record the initial non-pumping water level. Manually monitor groundwater levels at a 30-second interval near the beginning of the test, and at a 60-second interval for the duration.

5. Begin pumping and maintain constant rate for 8 hours. Monitor the flow rate throughout the test and adjust the pump and/or valve as required to maintain the target pumping rate as water levels decline.
6. Shut off the pump and monitor recovery for a minimum of 8 hours.
7. Analyze the test results.

3.0 ANALYSIS

3.1. Step Test

A four step pumping test conducted by PureEnergy Minerals was carried out at pumping rate steps of 45, 90, 130 and 170 usgpm. Each step was maintained for approximately 60 minutes. BGC analyzed the data collected from the step test to estimate the specific capacity of the well. The results are summarized in Table 3-1. A plot showing the step test data and the theoretical response for assumed aquifer characteristics is presented in Appendix A.

Table 3-1. Step Test Results.

Step	Flow Rate, m^3/d [usgpm]	Drawdown, m [feet]	Specific Capacity, m^2/d [usgpm/ft]
1	245.3 [45]	16.3 [53.5]	15.0 [0.84]
2	490.6 [90]	36.0 [118.1]	13.6 [0.76]
3	708.6 [130]	39.6 [130.0]	17.9 [1.00]
4	926.7 [170]	53.6 [175.9]	17.3 [0.97]

The formation loss (B) and well loss (C) coefficients were 0.89 ft/usgpm and 8.4×10^{-4} ft/usgpm^2 respectively, or in SI units, 0.05 days/m^2 and 8.6×10^{-6} days^2/m^5 respectively. The transmissivity from the step test was estimated at 1,200 usgpd/ft or 1.7×10^{-4} m^2/s.

3.2. Constant Rate Test

BGC analyzed the data collected from the 8-hour constant rate pumping test along with the recovery period to provide an estimate of aquifer transmissivity. The analysis was completed utilizing a variety of analytical solution methods using AQTESOLV (version 4.50.002, Duffield 2007). The quality of the analysis is dependent on the quality of the field data. BGC had no role in the data collection in the field.

The range of aquifer transmissivity for the variety of analytical solutions utilized are shown in Table 3-2 along with the analytical method utilized. Aquifer transmissivity values ranged from 1.7×10^{-4} m^2/s to 4.6×10^{-4} m^2/s (or 1,180 to 3,200 usgpd/ft). These transmissivities are considered to be relatively low for sand and gravel aquifers. Result plots for the completed analyses are included in Appendix A.

Table 3-2. Constant Rate Pumping Test Analysis Results.

Analysis Method	Transmissivity, m^2/s [usgpd/ft]
Barker	3.8×10^{-4} [2,640]
Cooper-Jacob	2.4×10^{-4} [1,670]
Dougherty-Babu	3.9×10^{-4} [2,710]
Theis	4.6×10^{-4} [3,200]
Theis (Recovery)	1.7×10^{-4} [1,180]

3.3. Long Term Pumping Rate

To support development plans for the lithium extraction process, BGC determined a preliminary estimate for the pumping rate that CV-1 could sustain in the long term. Using the B and C well coefficients determined during the step test, a transmissivity of 1,200 usgpd/ft (1.7×10^{-4} m^2/s), and a maximum drawdown of 320 feet (97.5 m) in order to keep the gravel and sand layers saturated, a pumping rate of 100 usgpm would be sustainable. A larger diameter well would allow a higher sustainable pumping rate but it is unknown how much higher.

3.4. Porosity Estimate

Literature sources provide a wide range of porosity estimates. Literature review of studies completed in support of the Yucca Mountain Radioactive Waste Disposal Facility indicate the effective porosity of sands and gravels similar to those found in CV-1 is likely in the range of 1% to 20% (Umari et al. 2006). The USGS (Belcher and Sweetkind 2010) uses specific yield[1] values of 0.1% to 47% for the alluvial basin materials in their regional groundwater flow model of Death Valley (adjacent to the Clayton Valley).

The porosity of a remolded laboratory sample taken from borehole CV-3, drilled near CV-1 was determined to be 34.1%. This value represents a single site-specific measurement and it is uncertain as to how variable the porosity might be (from sample to sample) or how well the remolded sample replicates in-situ conditions. The laboratory measurement reflects the best porosity estimate presently available. Additional sample collection and analysis would be required to improve confidence in the porosity estimate and the variability in this parameter.

[1] Since specific yield is the “drainable” porosity (i.e. reflecting the water that can be drained by gravity), it is less than or equal to the effective porosity.

4.0 CLOSURE

BGC Engineering Inc. (BGC) prepared this document for the account of PureEnergy Minerals. The material in it reflects the judgment of BGC staff in light of the information available to BGC at the time of document preparation. Any use which a third party makes of this document or any reliance on decisions to be based on it is the responsibility of such third parties. BGC accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this document.

As a mutual protection to our client, the public, and ourselves all documents and drawings are submitted for the confidential information of our client for a specific project. Authorization for any use and/or publication of this document or any data, statements, conclusions or abstracts from or regarding our documents and drawings, through any form of print or electronic media, including without limitation, posting or reproduction of same on any website, is reserved pending BGC's written approval. A signed and sealed copy of this document is on file at BGC. That copy is the record document, and takes precedence over any other copy or reproduction of this document.

Yours sincerely,

BGC ENGINEERING INC.
per:

Davan Russell, B.Sc., P.Eng. (AB)
Geoenvironmental Engineer

Geoff Dickinson, M.Eng., P.Eng., FEC
Principal Hydrogeological Engineer

Reviewed by:

Brent Mooder, M.Sc., P.Eng. (BC, AB, ON)
Principal Hydrogeological Engineer

DKR/GD/BM/igb/st

REFERENCES

Duffield, Glenn. 2007. AQTESOLV [computer program]. Version 4.50.002. HydroSOLVE Inc.

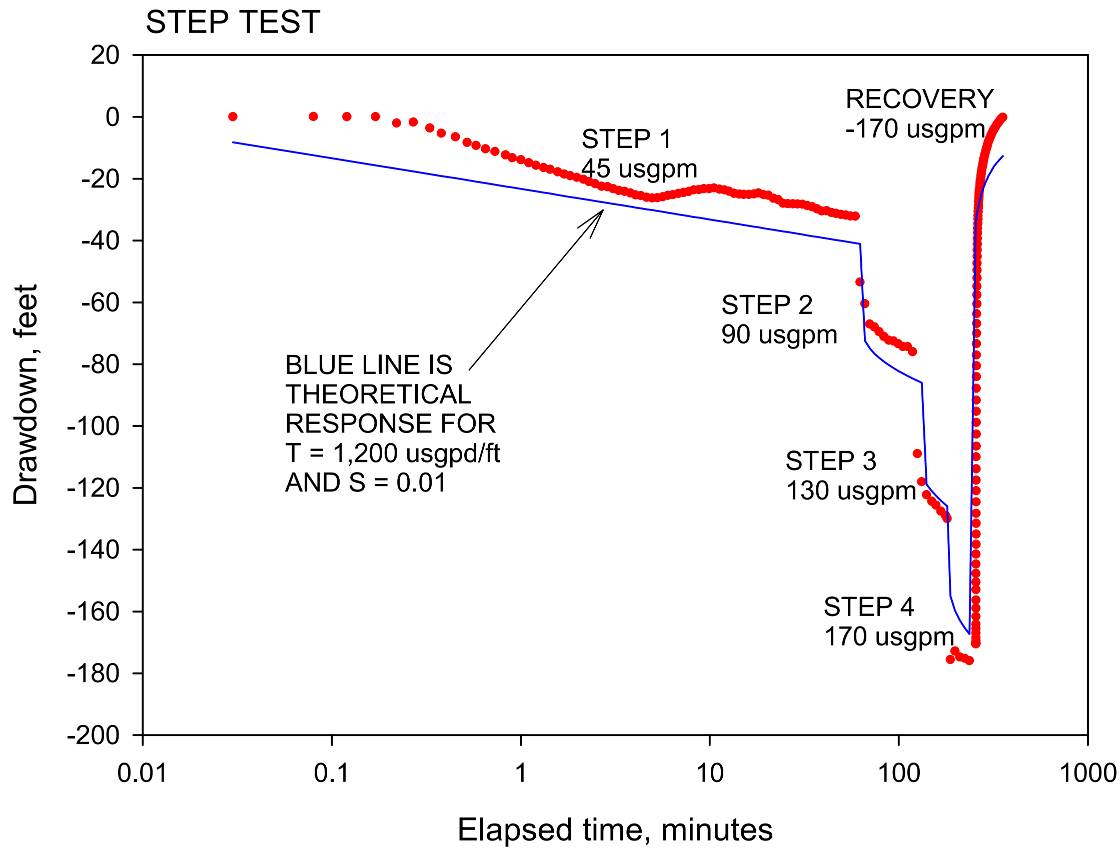
Belcher, W.R. and Sweetkind, D.S. [*Editors*], 2010, Death Valley Regional Groundwater Flow System, Nevada and California – Hydrogeologic framework and transient groundwater flow model: US Geological Survey Professional Paper 1711, 398 p.

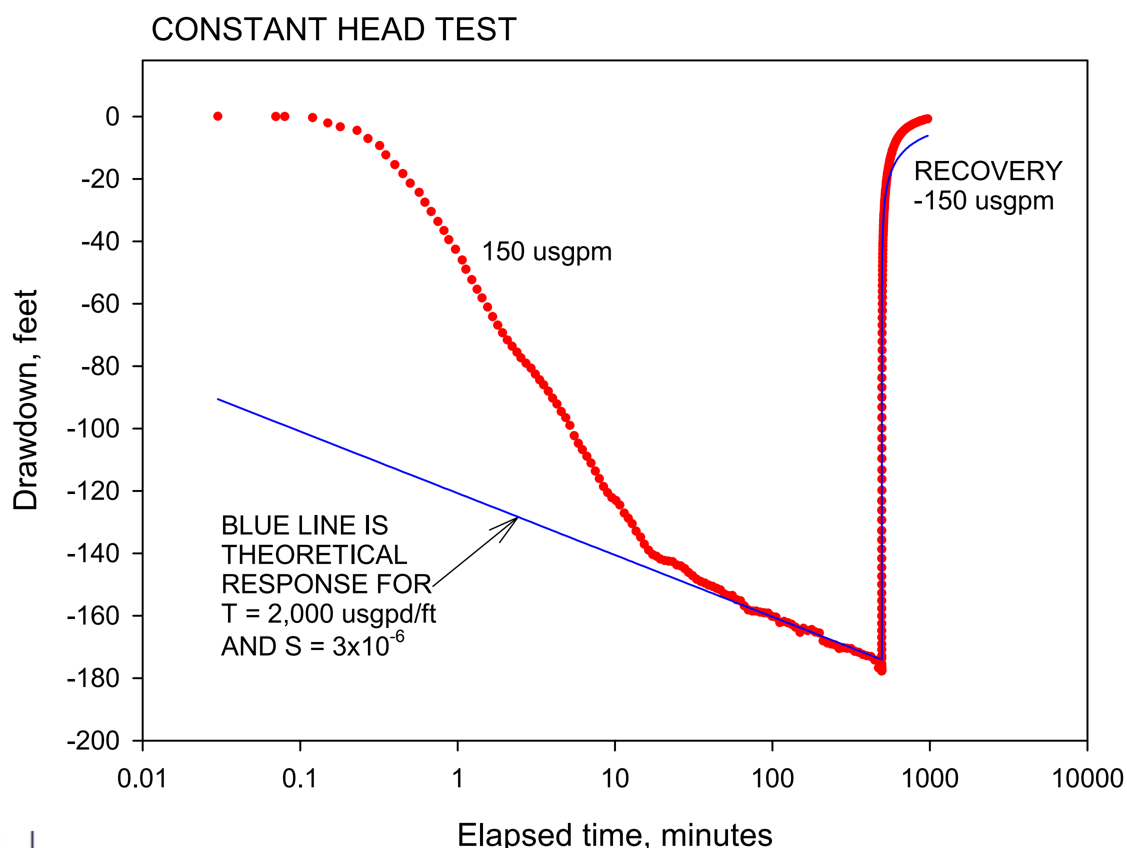
Broadbent. 2015. Data collecting summary letter, Pure Energy Minerals, Silver Peak, Nevada. Letter prepared for Pure Energy Minerals. May 26, 2015.

Kruseman, G.P. and N.A. de Ridder, 1994. Analysis and Evaluation of Pumping Test Data (2nd ed.), Publication 47, Intern. Inst. for Land Reclamation and Improvement, Wageningen, The Netherlands, 370p.

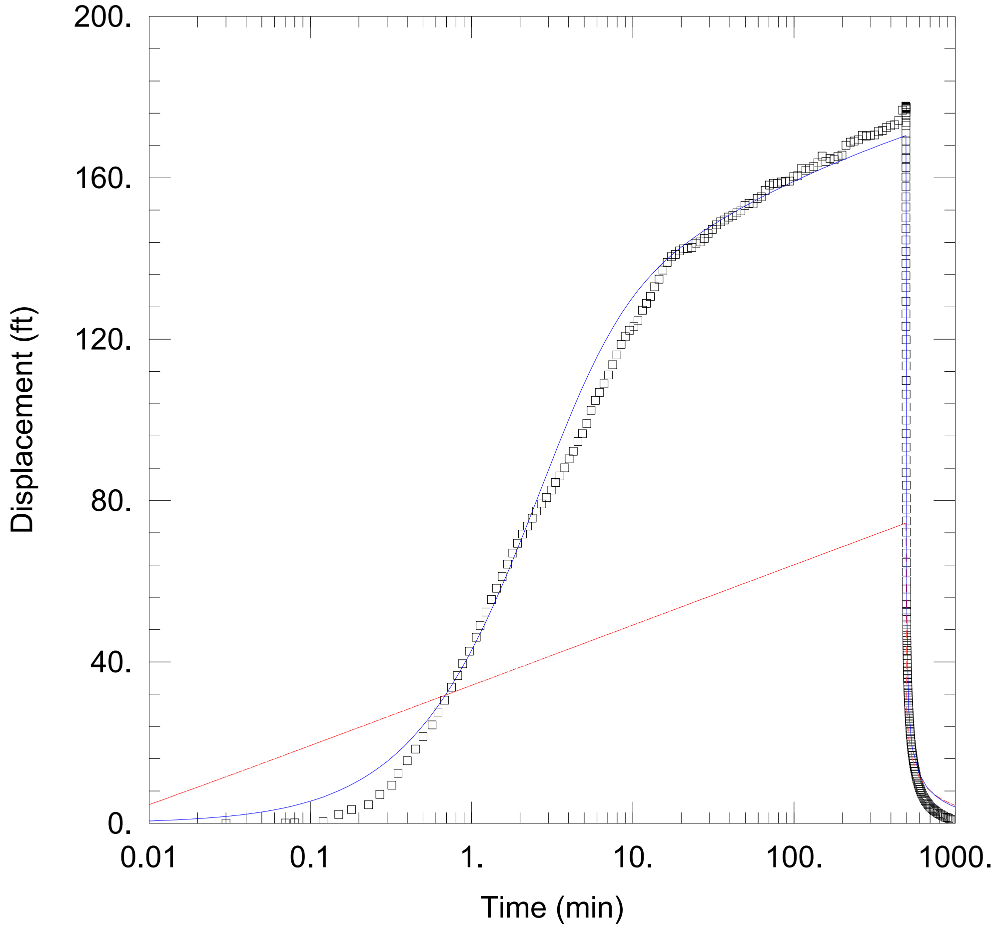
Umari, A., Earle, J.D., and Fahy, M.F. 2006. Analysis of Single-hole and Cross-hole Tracer Tests Conducted at the Nye County Early Warning Drilling Program Well Complex, Nye County, Nevada. *In* Proceedings of the 11th International High Level Radioactive Waste Management Conference: Global Progress Toward Safe Disposal, Las Vegas, NV, 30 April – 4 May 2006. American Nuclear Society, La Grange Park, Illinois, Vol. 1. Pp. 307-314

APPENDIX A
PUMPING TEST ANALYSIS RESULTS





DATA BY PureEnergy PLOTS BY BGC



CONTINUOUS RATE PUMPING TEST

Data Set: N:\...\PureEnergy Minerals-barker.aqt
Date: 04/17/15 Time: 10:03:47

PROJECT INFORMATION

Company: BGC Engineering Inc
Client: Pure Energy Minerals
Project: 1487-001
Location: Clayton Valley, NV
Test Well: CV-1
Test Date: 1 APRIL 2015

AQUIFER DATA

Saturated Thickness: 831. ft
Anisotropy Ratio (Kz/Kr): 0.08641

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
CV-1	0	0

Observation Wells

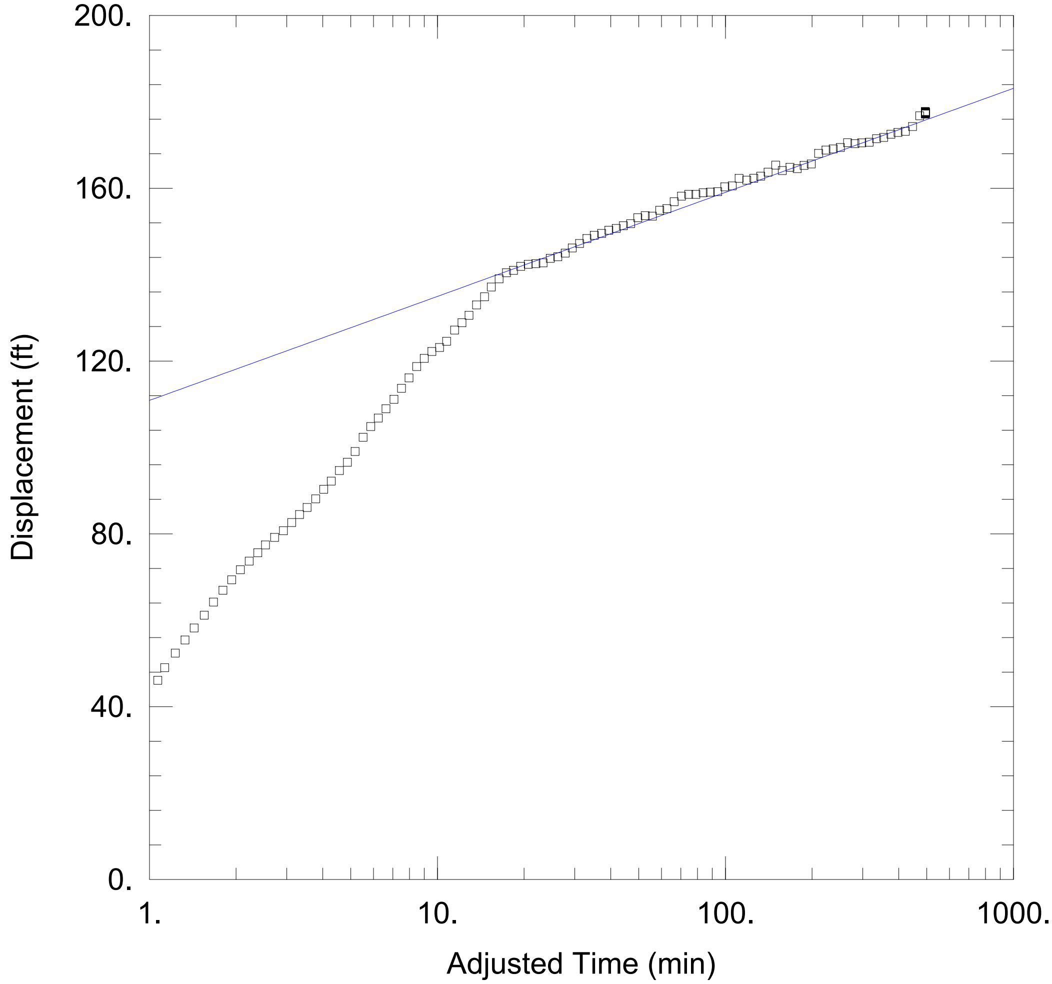
Well Name	X (ft)	Y (ft)
□ CV-1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Barker

K = 1.504E-6 m/sec
n = 2.268
Sw = -0.862
r(c) = 0.333 ft

Ss = 1.799E-6
b = 831. ft
r(w) = 0.583 ft



CONTINUOUS RATE PUMPING TEST

Data Set: N:\...\PureEnergy Minerals-cooper-jacob.aqt
Date: 04/17/15 Time: 09:57:52

PROJECT INFORMATION

Company: BGC Engineering Inc
Client: Pure Energy Minerals
Project: 1487-001
Location: Clayton Valley, NV
Test Well: CV-1
Test Date: 1 APRIL 2015

AQUIFER DATA

Saturated Thickness: 831. ft
Anisotropy Ratio (Kz/Kr): 0.08641

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
CV-1	0	0

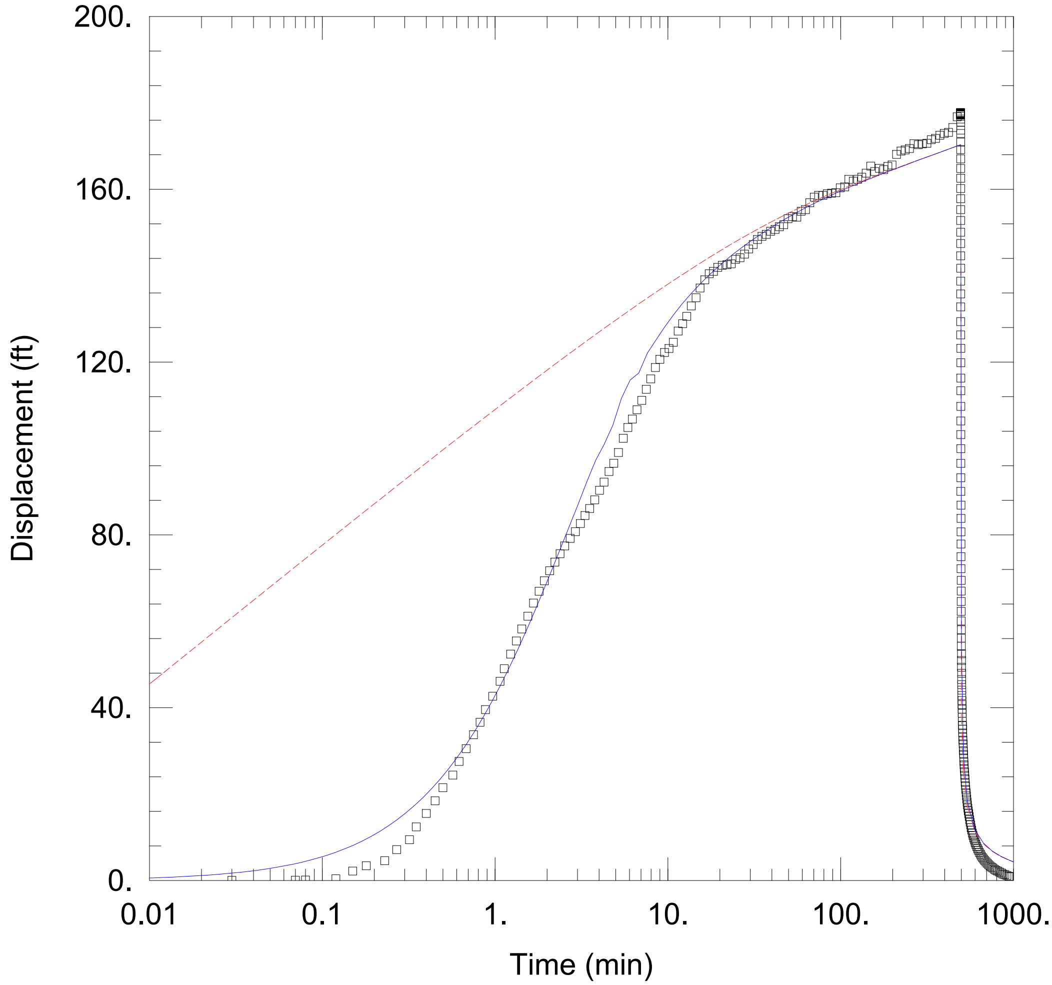
Observation Wells

Well Name	X (ft)	Y (ft)
□ CV-1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Cooper-Jacob

T = 0.0002362 m^2/sec
S = 2.507E-5



CONTINUOUS RATE PUMPING TEST

Data Set: N:\...\PureEnergy Minerals-doherty-babu.aqt
Date: 04/17/15 Time: 09:58:00

PROJECT INFORMATION

Company: BGC Engineering Inc
Client: Pure Energy Minerals
Project: 1487-001
Location: Clayton Valley, NV
Test Well: CV-1
Test Date: 1 APRIL 2015

AQUIFER DATA

Saturated Thickness: 831. ft
Anisotropy Ratio (Kz/Kr): 0.08641

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
CV-1	0	0

Observation Wells

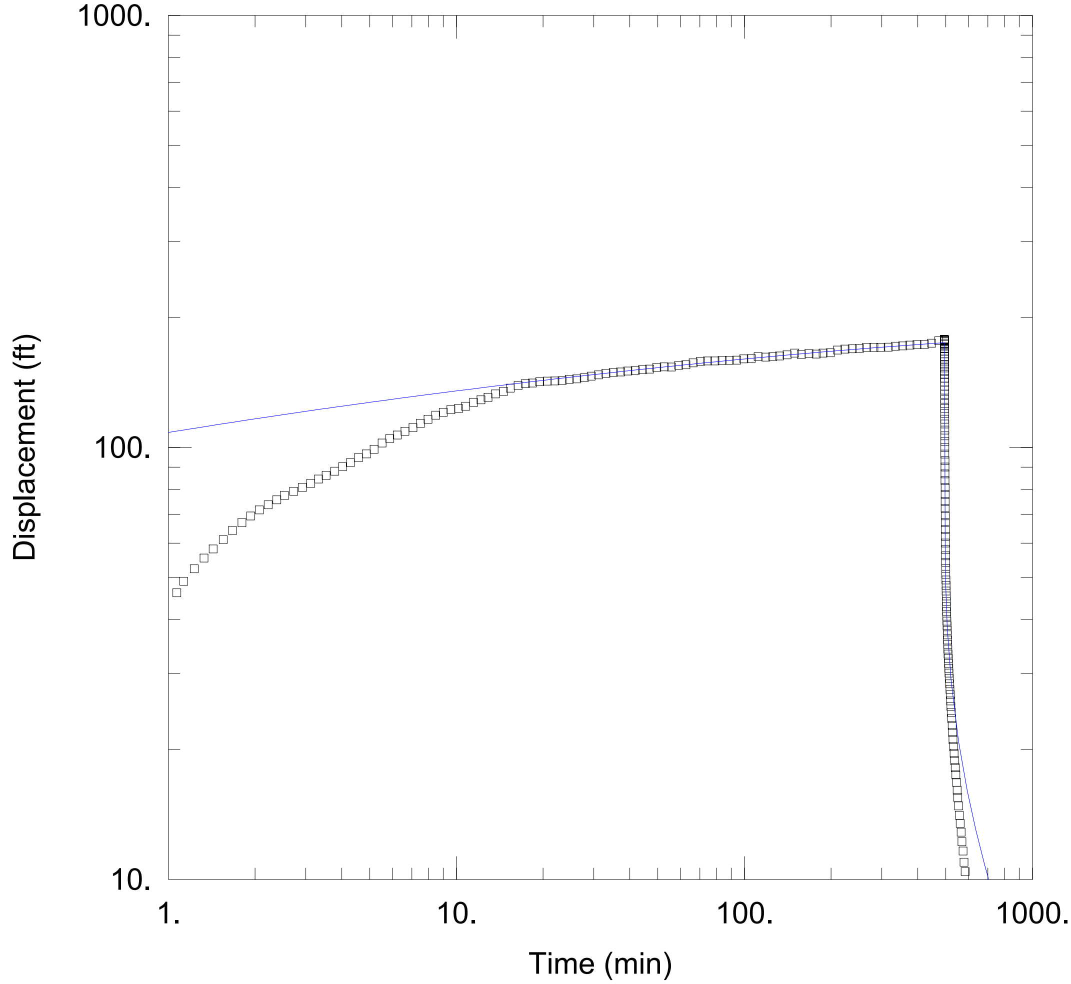
Well Name	X (ft)	Y (ft)
□ CV-1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Dougherty-Babu

T = 0.0003931 m^2/sec
Kz/Kr = 0.08641
r(w) = 0.583 ft

S = 1.574E-5
Sw = -1.869
r(c) = 0.333 ft



CONTINUOUS RATE PUMPING TEST

Data Set: N:\...\PureEnergy Minerals-theis.aqt
Date: 04/17/15 Time: 09:58:15

PROJECT INFORMATION

Company: BGC Engineering Inc
Client: Pure Energy Minerals
Project: 1487-001
Location: Clayton Valley, NV
Test Well: CV-1
Test Date: 1 APRIL 2015

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
CV-1	0	0

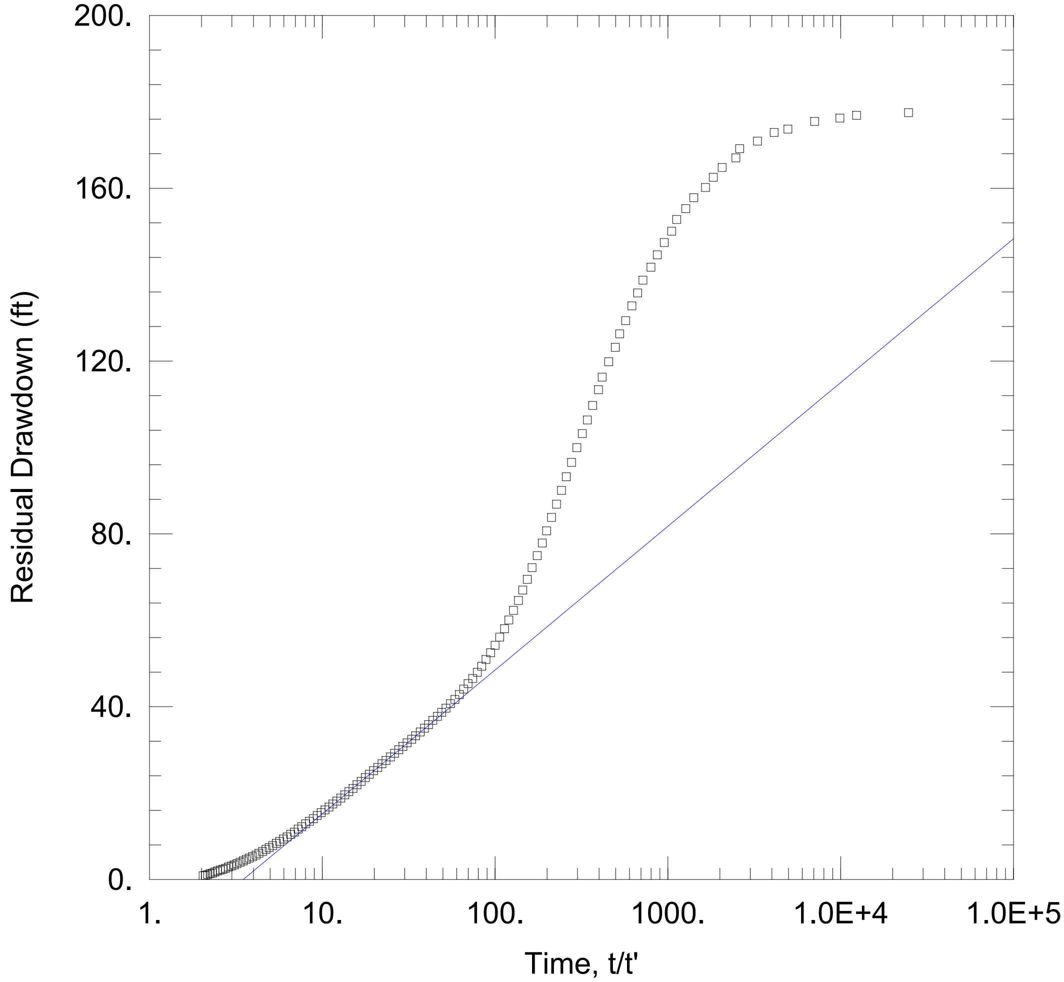
Observation Wells

Well Name	X (ft)	Y (ft)
□ CV-1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 0.0004614 m^2/sec
Kz/Kr = 0.08641
S = 0.0002339
b = 831. ft



CONTINUOUS RATE PUMPING TEST

Data Set: N:\...\PureEnergy Minerals-recovery.aqt
Date: 04/17/15 Time: 09:58:10

PROJECT INFORMATION

Company: BGC Engineering Inc
Client: Pure Energy Minerals
Project: 1487-001
Location: Clayton Valley, NV
Test Well: CV-1
Test Date: 1 APRIL 2015

AQUIFER DATA

Saturated Thickness: 831. ft
Anisotropy Ratio (Kz/Kr): 0.08641

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
CV-1	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ CV-1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Theis (Recovery)

T = 0.000171 m^2/sec
S/S' = 3.494

APPENDIX B
LABORATORY TESTING RESULTS

LABORATORY TEST DATA SUMMARY TABLE

Project: Pure Energy Minerals TAO Project Number: 1850-01-1

Log Number: 4307 Date Sampled: N/A Sampled By: Client

Date Received: 4/29/15 Date Tested: 4/30/15 Tested By: B. Huff

Sample Identification: CV-3 (580-590) and CV-3 (590-598) Combined

Supplier / Sample Source: CV-3

TEST DATA

CV-3 580-590 & CV-3 590-598 Combined	Results
Specific Gravity (ASTM D854)	2.514
***Dry Density (pcf)**	103.3
***Moisture Content (%)**	10.6
Void Ratio	0.518
Porosity (%)	34.1

*** Dry Density was Determined by Remolding Material to a "Medium Dense" State and Pre-Determined Moisture Content per Clients' Request.**

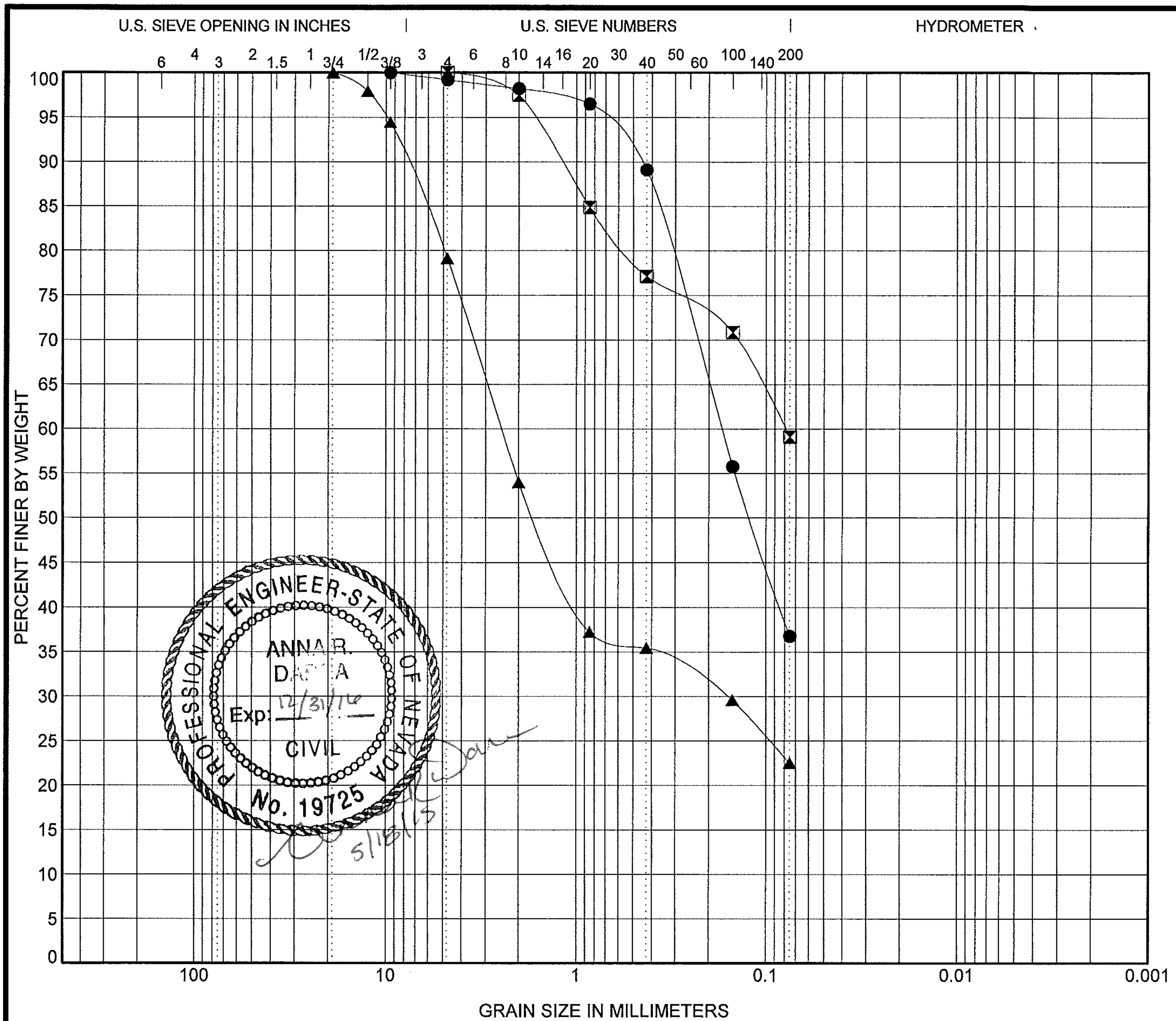
PROFESSIONAL ENGINEER - STATE OF NEVADA
ANNA R. DAPRA
Exp. 12-31-16
CIVIL
No. 19725

5/18/15

BLACK EAGLE CONSULTING, INC.
1345 CAPITAL BOULEVARD, SUITE A
RENO, NEVADA 89502-7140
PHONE (775) 359-6600
FAX (775) 359-7766

Respectfully Submitted By:

Anna R. Dapra, P.E
Laboratory Manager
Date: May 18, 2015



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		USCS Classification	LL	PL	PI	Cc	Cu
●	CV-3 570.0'	[Visual]					
⌧	CV-3 940.0'	[Visual]					
▲	CV-3 Comb. 580.0'	[Visual]					

Specimen Identification		D100	D60	D30	D10	MC %	%Gravel	%Sand	%Silt	%Clay
●	CV-3 570.0'	9.5	0.171				0.8	62.4	36.8	
⌧	CV-3 940.0'	4.75	0.079				0.0	40.9	59.1	
▲	CV-3 Comb. 580.0'	19	2.46	0.162			20.9	56.6	22.5	

Black Eagle Consulting, Inc.
1345 Capital Blvd., Suite A
Reno, Nevada 89502-7140
Telephone: (775) 359-6600
Fax: (775) 359-7766

GRAIN SIZE DISTRIBUTION

Project: Testing As Ordered
Location:
Project Number: 1850-01-1 Plate: a

US GRAIN SIZE2 1850011.GPJ US LAB.GDT 5/18/2015

Appendix 7.

CV-2 Drilling Log

(note: Labelled as CV-3 as that was original name of Borehole on BLM docs)

Pure Energy Minerals | Clayton Valley | NAD 83 11S 0450546 E 4175964 N

START MARCH 20, 2015 FINISH APRIL 18, 2015

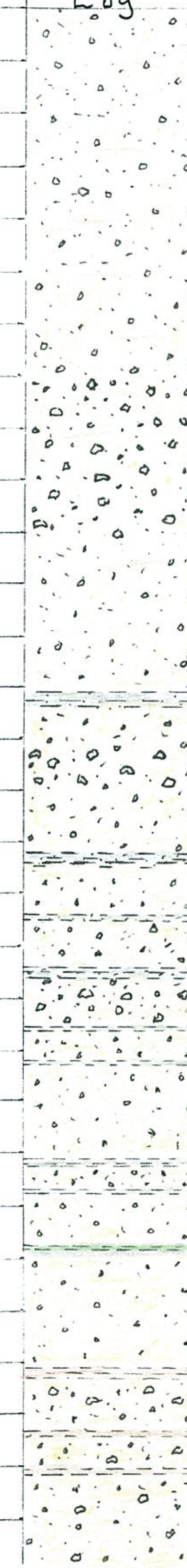
STATIC WATER LEVEL 25.4 ft 68.4° F → (by sound wave monitor)

Drill Hole CV 3 | Esmeralda Co. Nevada | NAD 27 11S 0450633E 4175764N | elev. 4170 ft

Logged by N. BARR

Hole from	Depth to	Drilling Time start	Drilling Time stop	Water Samp #	Sample time	Pump Flow Test sec/15gal	gal/min	pH	Temp °F	TDS g/liter Total Dissolved Salts	Sp. Grav	Specific Conductivity mS/c	Conductivity mS/c
0	10ft												
10	20												
20	30												
30	40												
40	50												
50	60												
60	70												
70	80	8:55	9:13AM										
80	90	9:18	9:29										
90	100	9:29	9:40										
100	110	9:50	10:02										
110	120	10:02	10:12										
120	130	10:24	10:36										
130	140	10:40	10:50										
140	150	11:01	11:12										
150	160	11:16	11:25										
160	170	11:38	11:52										
170	180	11:52	12:03PM										
180	190	12:12	12:24										
190	200	12:24	12:35										
200	210	12:50	1:03										
210	220	1:03	1:15										
220	230	1:24	1:40										
230	240	1:40	2:03										
240	250	2:16	2:30										
250	260	2:30	2:43										
260	270	2:52	3:04										
270	280	3:04	3:16										
280	290	3:24	3:39										
290	300'	3:39	3:52										

Graphic Log



Lithology

NOTE: Drill collar is on an active, NW draining alluvial fan. Coarse fraction is 75% pebble to small boulder, pale yellow-brown rhyolite comp. Lithic Tuff, 20% pale grey, fngr., tuff comp, siliceous to locally opaline, bulbous, accretionary Sinter, and 2-5% dK brown to black, pebble to cobble, Paleozoic chert and metasediments. Also sparse, siliceous matrix, med-fngr volcanoclastic sandstone, and pebble size 'Apache tear' obsidian. Off white to pale yellow fngr sand and silt is composed of devitrified to clayey ash, glassy angular to euhedral quartz and minor biotite. Fines are often wind deposited as small dunes.

20'

40'

0-70' Lithic Tuff, pale yellow - yellow brown silt to cr sand, to pea size pebbles. Lithic Tuff is composed of 10 to 20% partial void after cr ash-Lapilli, 5-10% med to fngr glassy ang to Euhedral quartz, and 1-2% biotite. Exotic Rock fragments common. Matrix is fngr, weakly indurated ash.

70-100' Lithic Tuff + increase in cr fraction as olive green, mod indurated, (epidotized?) tuff and 3-4% dK silic metaseds.

100-130' Lithic Tuff, pale yellow, fn to cr sand, minor fngr gravel, 1-2% green, indurated tuff + dK silic metased. fragments

130-285' Lithic Tuff, mostly pale yellow to pale yellow brown, silt to crgr sand to fngr gravel. Local gravel cobble to small boulder (?) size. Local zones of mod. indurated, (diagenetically silicified?), pale brown-green, fngr., tuff fragments. 1-2% dark silic chert/metaseds. Trace obsidian.

Includes 1 to 2.5 ft interbeds of pale grey Silty Clay of tuffaceous composition.

Silty clay interbeds occur on intervals of 5 to 30 ft.

→ Trace silicified plant fossil

← grey-green Silty Clay

→ 5% Obsidian

← pale brown Silty Clay

→ Lithic Tuff, similar pale yellow brown up to 10% green-brown, mod. Indurated Tuff, 3-5% dK. silic. metaseds

silt to crgr sand + mostly pebble gravel

Drilling Notes/Comments

SET 12" Casing 0-20' (3-20-15)

0-400' MUD ROTARY with 9" Tricone Bit

Drill 20-40' (3-22-15)

Drill 40-300' (3-23-15)

STEADY DRILLING 0-70'

70'

SLOWER DRILLING 70-100'
bit 'chatter' due to local cr rock - gravel, some cobble? to small boulder? size material

100'

STEADY DRILLING 100-140'

→ FLush hole - add polymer

140'

SLOWER DRILLING 140-190'
bit 'chatter' - increase in coarse rock

170'

STEADY DRILLING 170-190'

190'

SLOWER DRILLING 190-200' Coarse Rock

200'

STEADY DRILLING 200-230'

230'

SLOWER DRILLING 230-240'

240'

finer drill cuttings to 300'

260'

LOCAL COARSE ROCK 260-300'

→ 278-280' coarse Rock bit 'chatter'

Drill to 300' (3-23-15)

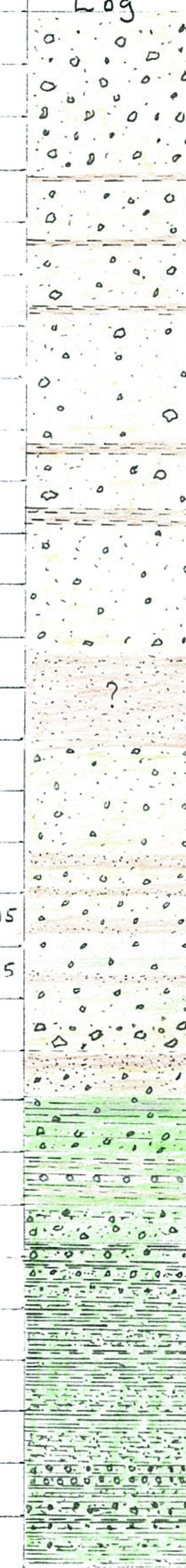
Pure Energy Minerals Clayton Valley NAD 83 11S 0450546 E 4175964 N

Drill Hole CV 3 Esmeralda Co. Nevada NAD 27 11S 0450633E 4175764N elev. 4170 ft Logged by N. BARR

Hole from	Depth to	Drilling Time start	stop	Water Samp#	Sample time	Pump Flow Test sec/15gal	gal/min	pH	Temp °F	TDS g/liter	Sp.Grav	Specific Conductivity mS/c	Conductivity mS/c
300	310ft	9:26AM	9:39										
310	320	9:39	9:57										
320	330	10:11	10:23										
330	340	10:23	10:34										
340	350	10:46	10:57										
350	360	10:57	11:07										
360	370	11:20	11:34										
370	380	11:34	11:44										
380	390	11:56	12:09PM										
390	400	12:09	12:22										
400	410	12:14PM											
410	420		12:23										
420	430	12:40											
430	440		2:22										
440	450	2:40		CV-3 450	3:15PM	24 Sec	37.5gal	7.61	71.26°	21.91	1.01	33.68	33.25
450	460		2:55										
460	470	3:03		CV-3 470	3:42	31 Sec	29 gal	7.47	68.13°	17.42	1.07	26.79	24.28
470	480		3:12										
480	490	3:37		CV-3 490	2:40	25 Sec	36 gal	7.27	71.62°	28.02	1.07	43.10	40.62
490	500		4:22										
500	510	2:46PM		CV-3 510	3:10	29 Sec	31 gal	7.61	69.28°	19.14	1.01	29.45	28.14
510	520		2:56										
520	530	3:13		CV-3 530	4:14	27 Sec	33 gal	7.24	70.17°	44.36	1.025	69.84	68.12
530	540		3:45										
540	550	4:06		CV-3 550	4:40	115 Sec	7.8 gal	7.75	69.80°	11.49	1.005	17.67	16.90
550	560		4:30										
560	570	4:51		CV-3 570	5:30	14 Sec	64 gal	7.69	68.63°	13.26	1.005	30.41	19.92
570	580		5:25										
580	590	9:47AM											
590	600'		10:06										

3-29-15
3-30-15

Graphic Log



Lithology

Lithic Tuff, mostly pale yellow to pale yellow-brown, silt to crgr sand to mostly fngr gravels, local cobble to small boulder gravel, coarse fraction may locally include distinctive olive-green to green brown indurated tuff and med gr volcanoclastic sandstone. Also 1-2% by local dk cilic quartzite/metaseds. Local .5 to 2ft interbeds of light brown Silty Clay

424' Silty Sand, light brown, vy fngr sand/silt In place formation? or moved down from up hole? 30-40% fngr angular quartz

442' Lithic Tuff, similar, but includes distinctive pale olive green clasts of mod indurated, (weakly silicified?) tuff

450' → Start Air Lift water Sampling

464' Silty Sand, light brown

467' Lithic Tuff, pale yellow, mostly crgr sand and gravels. interbeds of light brown Silty sand

light greenish-gray color

495' Coarse Lithic Tuff gravels

Silty Sand, lt brown

Lithic Tuff + Silty sand → ⊛ Geology Change

509' CLAY (80%) grey-green, 20% fn gravels

516' GREEN GRAVEL, 15% CLAY

520' Silty CLAY, green-brown

⊛ local thin interbeds of white ASH spheres/pellets

530' Interbedded CLAY, silty clay, fngr gravels mostly greenish gray to greenish brown 530 to 580' three thin interbeds of white ASH spheres/pellets NOTED

local white ASH

local white ASH

Drilling Notes/Comments

(3-24-15)

Drill 300-400', mud Rotary with 9" dia. Tricone Bit

> Poor cutting return, local coarse gravel 300-330' lots of polymer added

330'

→ mostly Slower Drilling 330-400' intervals of coarser gravels with crgr sand/silt

(Drill repairs 3-25 → 3-28, no drilling)

Rotary mud

400'

RC Air

At 400' pull rod, install 6" Casing 0-400'. Set up for reverse circulation using air. Try bladed carbide hammer bit (for clays)

> STEADY DRILLING 400-424' MIXED GRAVELS, Cr SAND/SILT difficult getting returns

424' → Difficult Drilling, frequent plugging of inner tube, all lt brown silty fn sand (may have run in from up hole?

442' (3-29-15)

Drill 400-500' RC/Air with bladed carbide hammer bit mostly difficult drilling frequent plugging/loss of circulation.

500' At 500' change to tricone bit with 'skirted' bladder sub STILL DRILLING RC/Air

(3-30-15)

Drill 500-580'

SLOW STEADY DRILLING 500-580' (Slower in clay interbeds)

573' ⊛ Definite increase in groundwater flow

580' (3-31-15)

Drill 580-598 slow

598' → lose circulation pull drill rods

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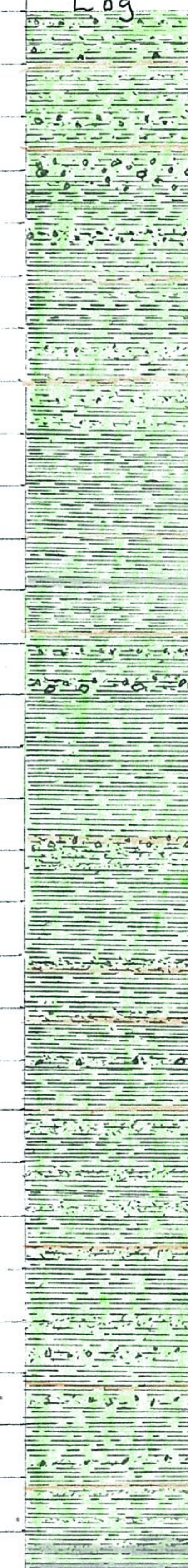
Hole Depth from	Hole Depth to	Drilling Time start	Drilling Time stop	Water Samp #	Sample time	Pump Flow Test sec/15gal	gal/min	pH	Temp °F	TDS g/liter	Sp.Grav	Specific Conductivity mS/c	Conductivity mS/c
600	610ft	3:08PM											
610	620		3:40										
620	630	12:20PM											
630	640		12:40										
640	650	12:45											
650	660		1:20										
660	670	1:30											
670	680		2:02										
680	690		2:45										
690	700		3:08										
700	710	3:25											
710	720		4:05										
720	730	9:15AM											
730	740		9:44										
740	750	10:02											
750	760		10:35										
760	770	10:58											
770	780		11:35										
780	790	11:45											
790	800		12:22PM										
800	810	12:32											
810	820		1:35										
820	830	1:55											
830	840		2:25										
840	850	2:38											
850	860		3:13										
860	870	3:25											
870	880		4:05										
880	890	9:06AM											
890	900'		9:38										

Graphic Log



Lithology

Interbedded silty clay, clay with minor fngr gravels. mostly greenish-gray to locally greenish-brown Gradational from tuffaceous comp. silty clays to true clays at about, 670'. True clays occur as larger 'slabs' in cuttings. Slower drilling, greater rotation pressure and mud pump 'laboring' also noted in clay zones. Local, several inch thick white ash interbeds also noted.

local med gray – elevated fngr biotite

Increase of true clay interbeds noted by drillers.

675-900' typically about 30% clay 60% silty clay and 5-10% med gr sand to fngr gravel. Local thin interbeds of white ash 'pellets'. Dominantly greenish-gray. Local med brown or gray interbeds. Minor bedded, weakly indurated, silty tuffaceous sandstone.

Trace white ASH

Trace white ASH

minor white ASH

Trace white ASH

local dk gray silty interbeds composed of biotite? minor brown bedded tuff

Drilling Notes/Comments

(4-2-15)

Reenter and support hole using mud and tricone bit. Drill 598-620' using mud. Switch to RC/Air at 620' Drill 620-625', but no sample return. Pull rod, 120' of drill string packed with green silty clay.

— Downtime for drill repairs —

(4-16-15)

Resume drilling with mud and modified 'skirted' tricone bit. Drill 620-720'

MOSTLY STEADY DRILLING 620-675'

Drillers report heavier clay intervals and slower Drilling starting at ≈675'

≈740-820' mud pump laboring due to clays

(4-17-15)

DRILL 720-880'

Hole completed using bentonite mud, polymer additive and modified 'skirted' tricone bit

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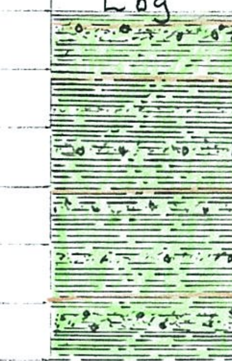
Hole Depth from	to	Drilling Time start	stop	Water Samp #	Sample time	Pump Flow Test sec/15gal	gal/min	pH	Temp °F	TDS g/liter	Sp. Grav	Specific Conductivity mS/c	Conductivity mS/c
900	910ft	9:58AM											
910	920		10:58										
920	930	11:15											
930	940		11:55										
940	950	12:10PM											
950	960 T.D.		1:18										

Graphic Log



ASH

960' T.D.

Lithology

Interbedded clay (50%), Silty Sand (45%) and local med-cr gr sand and f n gr gravels. clays and siltysand are med. green to green gray. 2-5% local interbeds of dark brown Tuffaceous siltstone. Minor white Ash at 900-902'

Drilling Notes/Comments

(4-18-15)
Drill 880-960' T.D.

bentonite drilling mud showing evidence of breaking down due to salt in ground water

Drillers report heavy clay and difficult drilling at 900', 932, 949'-954 & 950-960'
Hole terminated due to increasing rotation resistance.