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## RESOURCE UPDATE FOR JORC 2012 ON HATCH POINT POTASH PROJECT

- **Mineral Resource of 902 Mt @ 20% KCl with 15.9% KCl cut-off**
- **Includes high-grade sylvinitite of 303 Mt @ 24.4% KCl and 104 Mt @ 30% KCl**
- **One of the largest and best grade potash resources in the USA**
- **Less than one-fifth of project area included in resource**

Potash Minerals is pleased to reaffirm its Mineral Resource estimate to comply with JORC 2012 and provide supplemental details for its 90% owned Hatch Point Potash Project ("Project") in south east Utah, USA.

The Mineral Resource estimate has been defined on less than 20% of the 405 km<sup>2</sup> Project area, encompassing an area of the Project located on State land and the recently granted 22 Federal Prospecting Permits. Additionally, only potash beds at least 2m thick and of greater than a 15.9% KCl-equivalent (10% K<sub>2</sub>O) composite grade were included for this maiden resource estimate.

Independent consultant Agapito Associates, Inc. has issued a Mineral Resource of **902.4 Mt at 20.3% KCl equivalent (12.8% K<sub>2</sub>O) average grade** at a 15.9% KCl equivalent (10% K<sub>2</sub>O) composite cut-off grade. The resource breakdown is summarized in Table 1. Detailed analysis of the Mineral Resource with geology, estimation methodology, and accompanying tables is provided in the Appendix.

The Mineral Resource includes both sylvinitite and carnallite material with the sylvinitite Mineral Resource estimated at 604Mt at **21.4% KCl** (13.5% K<sub>2</sub>O) average grade. At higher cut off grades the sylvinitite resource stands at **303 Mt at 24.4% KCl** (15.4% K<sub>2</sub>O) average grade, and within this **104 Mt at 30% KCl** (18.9% K<sub>2</sub>O) average grade.



## **Hatch Point, Paradox Basin, Utah USA**

The Project's superior location, excellent infrastructure and availability of groundwater, gas, electricity, and local labour make the Project an attractive development proposal.

The potash occurs in two beds of interest (P13 & P18), both of which have upper and lower beds (geographical maps of each upper and lower bed are attached in the appendix).

Independent USA geological and mining consultant Agapito Associates, Inc. has prepared the Mineral Resource estimate based on data from 45 drill holes, including four cored holes with potash assays, on the site or in the immediate Project area.

Upon completion of the Company's proposed four-hole federal drilling program, the potash resource is expected to increase in size and status.

Potash Minerals Limited has earned 90% of the Project which covers 405 km<sup>2</sup> in the Paradox Basin in south eastern Utah. The US Federal Bureau of Land Management ("BLM") has approved the assignment of all 405 km<sup>2</sup> of the permit applications to K2O Utah LLC. The BLM has also ruled that all of K2O Utah LLC's lands are not designated as a Known Potash Leasing Area and therefore will not be subject to competitive bidding.

The Project is located close to key agricultural regions of the USA and as such is well situated to supply fertilizer manufacturers and agricultural cooperatives in the western USA. The Project also has substantial export potential given its excellent proximity to key USA rail infrastructure leading to West Coast and Gulf ports.

### **For and on behalf of Potash Minerals Limited**

**Ananda Kathiravelu**  
**Chairman**

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### **Competent Persons Statement**

*The information set out above that relates to exploration results and Mineral Resources is based on information prepared by Ms. Vanessa Santos, the Chief Geologist and Mr. Leo J. Gilbride, Vice President, both with Agapito Associates, Inc. Ms. Santos and Mr. Gilbride are Registered Members of The Society of Mining, Metallurgy and Exploration (SME), a Recognised Overseas Professional Organisation and are employed by Agapito Associates Inc.. Ms. Santos and Mr. Gilbride each have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Ms. Santos and Mr. Gilbride consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.*

*A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.*



**Table 1. Hatch Point Potash Project Mineral Resource**

Based on a 15.9% KCl (10% K<sub>2</sub>O) composite grade cut-off and a 2.0-m bed thickness cut-off

Bed	Mineralogy	Average Thickness (m)	Resource Area (km <sup>2</sup> )	In-Place Tonnes (M) <sup>1,2</sup>	K <sub>2</sub> O (wt %)	KCl (wt %)
<b>Measured<sup>3</sup></b>						
P13 Upper	Sylvinite	-	-	-	-	-
P13 Lower	Sylvinite	3.2	0.87	5.0	12.9	20.4
P18 Upper	Sylvinite	-	-	-	-	-
	Carnallite	8.8	0.51	6.9	10.5	16.6
P18 Lower	Sylvinite	-	-	-	-	-
	Carnallite	2.7	0.51	1.9	15.2	24.1
<b>Total Measured</b>				<b>13.8</b>	<b>12.0</b>	<b>19.0</b>
<b>Indicated<sup>4</sup></b>						
P13 Upper	Sylvinite	-	-	-	-	-
P13 Lower	Sylvinite	3.4	4.91	29.5	12.6	20.0
P18 Upper	Sylvinite	-	-	-	-	-
	Carnallite	8.4	4.85	63.0	10.5	16.7
P18 Lower	Sylvinite	-	-	-	-	-
	Carnallite	2.7	4.05	15.5	15.1	24.0
<b>Total Indicated</b>				<b>107.9</b>	<b>11.7</b>	<b>18.8</b>
<b>Inferred<sup>5</sup></b>						
P13 Upper	Sylvinite	3.3	7.31	42.4	12.9	20.5
P13 Lower	Sylvinite	3.4	10.59	64.4	12.1	19.2
P18 Upper	Sylvinite	4.4	45.24	353.9	14.0	22.2
	Carnallite	7.9	14.09	170.9	10.7	17.0
P18 Lower	Sylvinite	4.9	12.53	108.1	13.0	20.7
	Carnallite	2.6	11.04	41.0	14.3	22.7
<b>Total Inferred</b>				<b>780.7</b>	<b>12.9</b>	<b>20.5</b>
<b>Total Measured, Indicated &amp; Inferred</b>				<b>902.4</b>	<b>12.8</b>	<b>20.3</b>

"-" indicates no significant mineralisation identified.

1. Average bulk density of sylvinite 2.08 t/m<sup>3</sup>. Carnallite bulk density varies by grade; potential range 1.61 to 2.17 t/m<sup>3</sup>.
2. Bed thickness cut-off 2.0 m and composite grade cut-off of 10.0% K<sub>2</sub>O.
3. Measured Resource located within 400-m radius from an exploration hole.
4. Indicated Resource located between 400-m and 1,200-m radius from an exploration hole.
5. Inferred Resource located between 1,200-m and 2,400-m radius from an exploration hole.

Note: See appendix for detailed analysis of the Mineral Resource with geology, estimation methodology, and accompanying tables.

The reader is cautioned that a Mineral Resource is an estimate only and not a precise and completely accurate calculation, being dependent on the interpretation of limited information on the location, shape, and continuity of the occurrence and on the available sampling results. Actual mineralisation can be more or less than estimated depending upon actual geological conditions.

The Mineral Resource statement includes Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there can be no certainty that further exploration work will result in the determination of Indicated or Measured Mineral Resources. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. No Mineral Reserves are being stated.



## **Appendix**

### **Explanatory Notes to the Mineral Resource Estimate for the Hatch Point Potash Project**



## **Hatch Point Potash Project Summary**

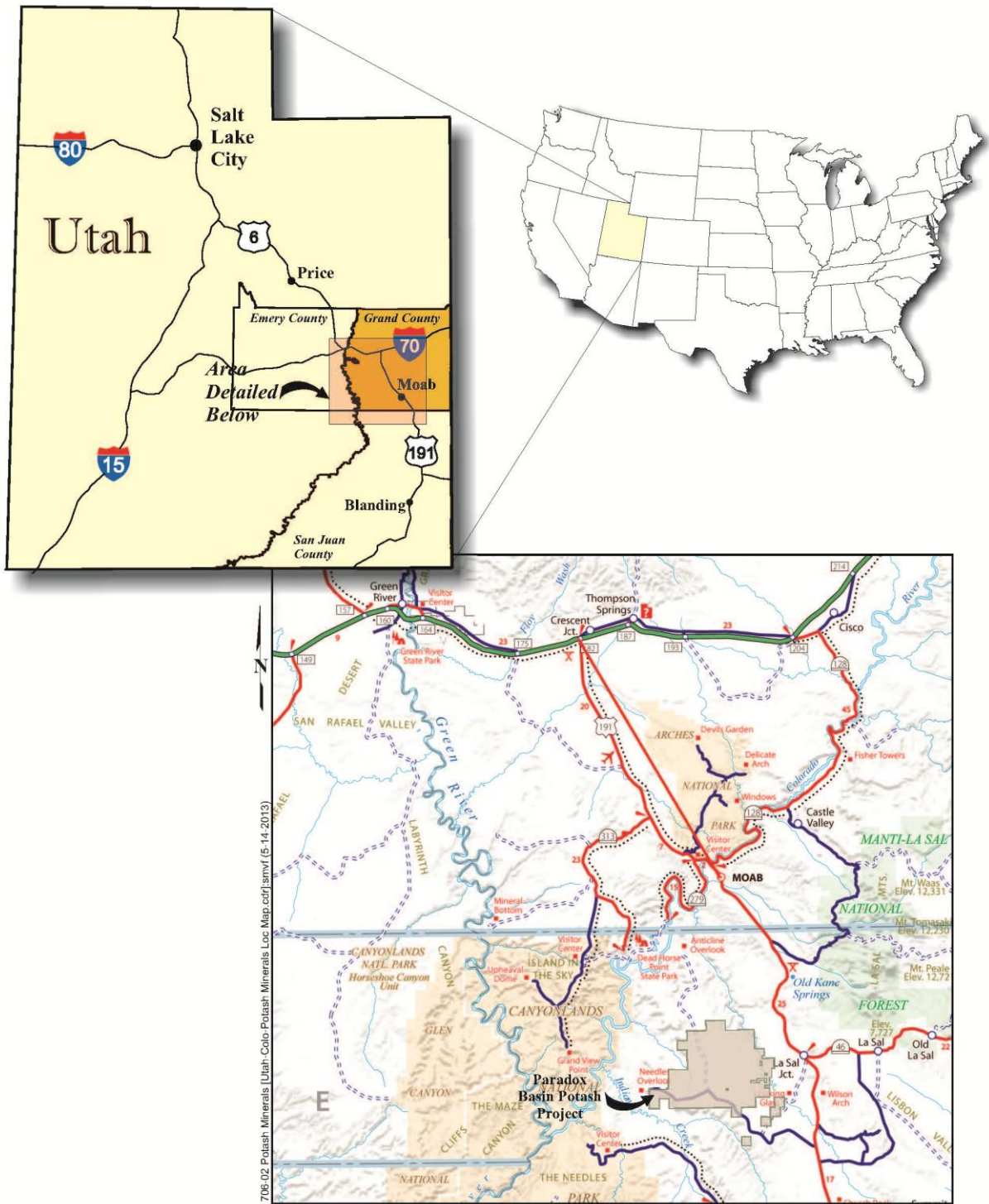
Potash Minerals Limited (Potash Minerals) is a West Perth, Western Australia, Australia-based mineral exploration and development company with international interests. Potash Minerals, formerly known as Transit Holdings Limited (Transit) (ASX: TRH), is incorporated and registered in Australia as a limited liability company listed on the Australian Stock Exchange (ASX: POK). Potash Minerals is focused on developing the Hatch Point Potash Project (HPPP) Property (the "Property") located in the potash-bearing Paradox Basin of San Juan County, Utah, United States of America (USA) (Figure A-1). Potash Minerals owns 90 percent (%) of K2O Utah LLC (K2O Utah), its potash joint venture partner that owns the HPPP mineral rights.

Agapito Associates, Inc. (AAI) was commissioned by Potash Minerals to provide an independent Competent Person (CP) review and Joint Ore Reserves Committee (JORC) 2012 Compliant Resource Estimate (the "report") on the HPPP Property. AAI originally completed a preliminary due diligence assessment of the occurrence of potash mineralisation based on readily available drill hole logs, published structural mapping, and other geologic data in 2008 (AAI 2008). AAI identified a maiden JORC Compliant Exploration Target in February 2009 (AAI 2009a) and later updated the Exploration Target in April 2009 (AAI 2009b) and again in August 2011 (AAI 2011) as additional geological data became available.

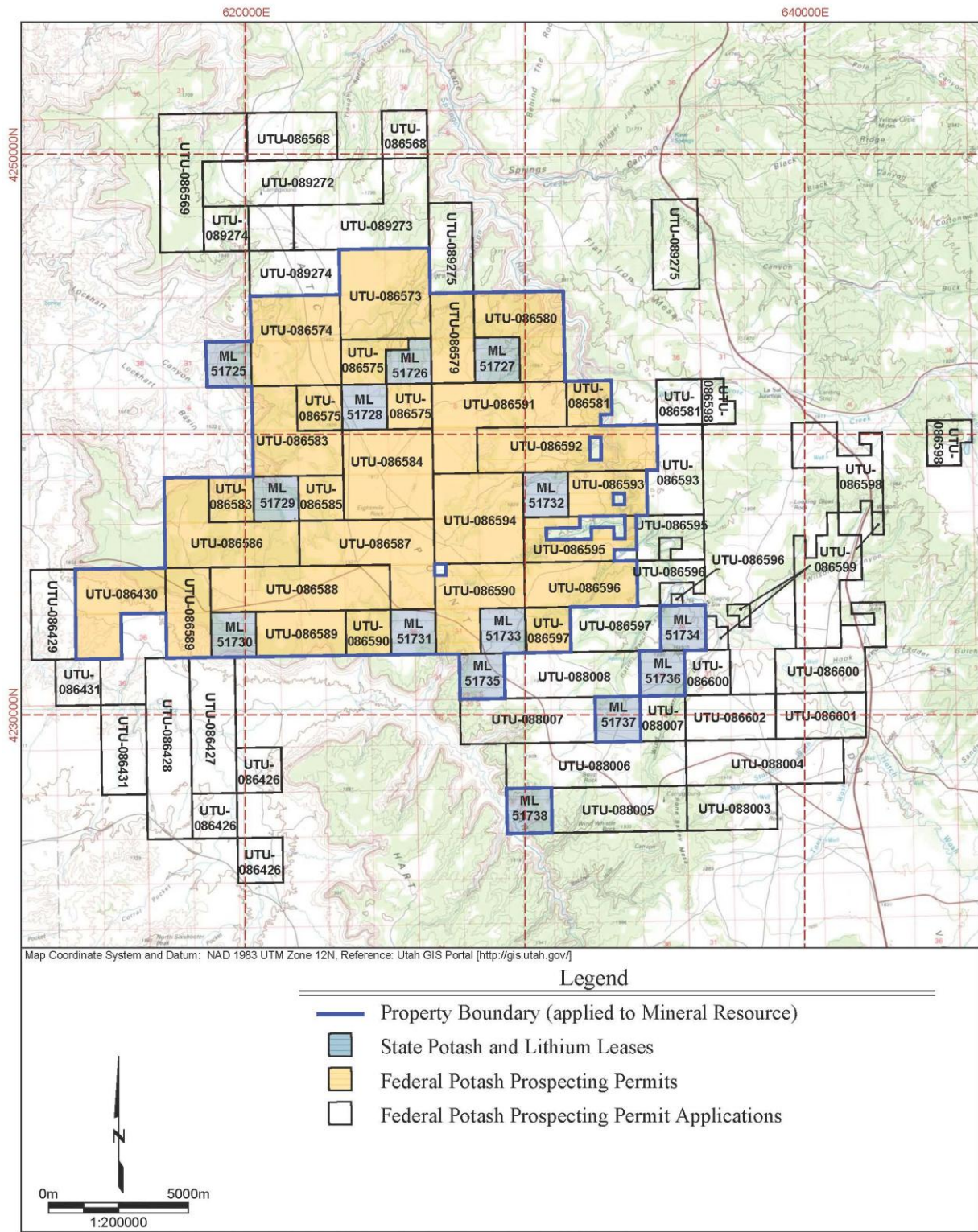
K2O Utah and Potash Minerals completed a three-hole potash exploration program on state leases held by K2O Utah in 2011 and 2012. The program confirmed potash mineralisation, bed thickness, and potash grade based on core assayed in Potash beds 13 and 18. On 25 April 2013, K<sub>2</sub>O Utah received exploration permit approval for 17 federal potash prospecting permit applications (PPAs) originally submitted to the Bureau of Land Management (BLM) in June and July 2008 (BLM 2013) (Figure A-2). Permit approval marked a milestone for the project, which defined a clear path forward for mineral leasing on the federal lands portion of the Property and secured mineral tenure required for definition of a Mineral Resource. A maiden JORC Mineral Resource was estimated for the Property with the newly tenured lands and is the subject of this report.

The information in this report that relates to the maiden Mineral Resource estimate is based on information prepared by Ms. Vanessa Santos, Chief Geologist and Mr. Leo J. Gilbride, Vice President, both with AAI. Ms. Santos and Mr. Gilbride visited the Property multiple times in 2011 and 2012 during Potash Mineral's exploration drilling campaign.

Ms. Santos and Mr. Gilbride are Registered Members of The Society of Mining, Metallurgy, and Exploration (SME), a Recognized Overseas Professional Organisation (ROP). Ms. Santos and Mr. Gilbride have sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity which they are undertaking, to qualify as CPs, as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Ms. Santos and Mr. Gilbride consent to the inclusion in this report of the matters based on this information in the form and context in which it appears.



**Figure A-1. Property Location Map**



**Figure A-2. Land Tenure**



## **Property Description**

The town of Moab, Utah, USA is the county seat of Grand County and the principal town in the region with a population of approximately 5,500. The Property is located approximately 25 kilometres (km) south of Moab and is within a 1-hour drive from the centre of town. Originally a uranium mining centre, Moab has an experienced workforce and well-established infrastructure to support exploration activities. The BLM District field office is located in Moab.

The Property is arid to semi-arid high desert. Vegetation consists of sparse sage and black brush, clumps of native grasses, and sporadic pinion and juniper. The land supports typical desert fauna including mule deer, pronghorn, coyote, rabbit, foxes, rodents, and reptiles.

The Property lies west of Highway 191 near the La Sal Junction, approximately 103 highway-km south of Interstate 70, a major traffic corridor, which connects the area with Grand Junction (235 km) and Denver (430 km) to the east, and Salt Lake City via Highway 6 to the northwest (370 km). Major oil and gas pipelines and electrical transmission lines pass through utility corridors east of the Property adjacent to Highway 191. Natural gas is abundant from nearby wells with collector pipelines on and around the Property.

Intrepid Potash, Inc. (Intrepid) operates the only potash mine in the district, the Moab Mine (also known as the Cane Creek Mine), producing on the order of 100,000 tonnes of muriate of potash (or KCl) per year (tpy) by solution mining.

The Union Pacific Railroad Central Corridor mainline connects Denver and Salt Lake City and runs adjacent to the Interstate 70 corridor approximately 103 km north of the Needles Overlook turnoff to the Property. The Cane Creek Subdivision railroad spur, a common carrier line, runs from Thompson, Utah, parallel to Highway 191, to the Intrepid mine located north of the Colorado River, and is the closest rail to the Property.

## **Tenure and Surface Rights**

The Property comprises 14 state potash leases totalling 3,595 hectares (ha) and 22 federal potash prospecting permits totalling 17,833 ha. K2O Utah holds an additional 20,615 ha of federal lands under 27 potash prospecting permit applications contiguous with or in close proximity to the granted areas. Prospecting permits entitle the permit holder to apply with the BLM for a preference right lease (PRL) if a valuable deposit can be demonstrated by exploration and the BLM determines the lands are chiefly valuable for potassium.

On 25 April 2013, the BLM completed its Environmental Assessment (EA) of an exploration plan submitted by Potash Minerals, issued a Finding of No Significant Impact (FONSI), and signed a Decision Record (DR) (BLM 2013) granting approval of the 22 potash prospecting permits and authorisation to drill up to five potash exploration holes on permitted lands. The exploration plan includes four holes located in the north-central part of the Property, and one hole located to the southwest. The four north-central holes target an area where the potash beds are projected to be relatively undisturbed by faulting, and are flat-lying,





and comprised of sylvinite, a mechanical mixture of sylvite (KCl) and sodium chloride (NaCl), of attractive thickness and grade.

## **Geology**

The Property is located within a geologic province known as the Paradox Salt Basin (the "Paradox Basin") that extends approximately 160 km in width and 320 km in length in a northwest-southeast direction spanning south eastern Utah and south western Colorado, with small portions in north eastern Arizona and north western New Mexico. During middle Pennsylvanian time, the Paradox Basin formed as a restricted shallow marine environment marked by 29 evaporite sequences as defined by Hite (1960) with facies change towards the basin-edge to shallow and open-water marine sediments. The limestone-dolomite-anhydrite-halite sequences are broken by siliciclastic beds marking periods of sediment influx related to glaciation (Hite 1961). The apex of the penesaline to hypersaline evaporation in a sequence may be marked by the accumulation of potassium salts.

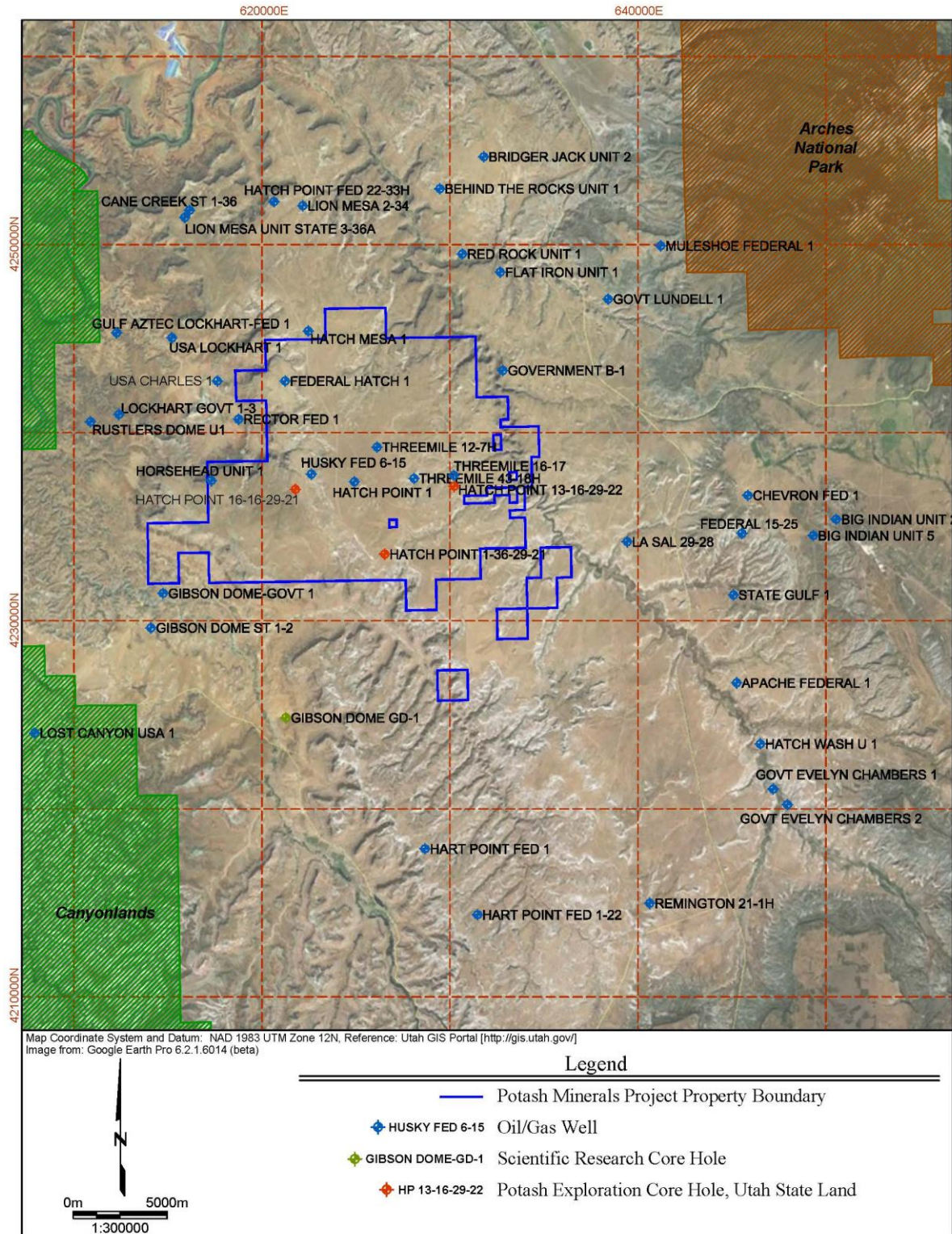
The Paradox Basin hosts up to 29 evaporative cycles, with as many as 11 of economic interest for potash mining of sylvinite (KCl) and/or carnallite, a potassium magnesium chloride ( $\text{KCl} \cdot \text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ ).

A review of 42 historical holes (Figure A-3) has identified mineralisation in Potash beds 5, 6, 9, 13, 16, 18, 19, and 21. On the Property, Potash 13 and 18 are identified to be the most prospective. Potash 18 is the principal bed of interest with potential for solution mining. Within the Property, Potash 18 occurs in an upper and lower split referred to as Potash 18 Upper and Potash 18 Lower. Potash 13 is considered a secondary bed of interest for solution mining. Potash 13 also occurs in an upper and lower split referred to as Potash 13 Upper and Potash 13 Lower. The grade of potash in other cycles is considered too low to be of economic interest at this time based on limited geological data.

## **Exploration and Methodology**

This report carries forward and updates information reported in the JORC Exploration Target (AAI 2011). That Exploration Target included a conceptual estimate of tonnage and average grade for potash mineralisation contained in two beds ranging in depth from approximately 1,000 to 2,000 m. The basis for the Exploration Target range was a computerised geologic block model, developed from historical geophysical data from 38 oil and gas wells, publicly available through the State of Utah Department of Natural Resources, Oil, Gas, and Mining (UDOGM 2012) and published results of chemical analysis on potash core from one scientific drill hole. Additional holes have been evaluated since that time, for a total of 45.

Oil and gas records are submitted and stored with the UDOGM, and are made available for public use after a period of 2 years. Those records include down hole geophysical and drilling records. Potash, as well as salt and clastics, can be defined through the use of the electronic log (elog) suites. Gamma ray logs in American Petroleum Institute (API) units provide the principal information used in the location, identification, and evaluation of potash. Neutron, sonic and density logs, in various combinations, can augment the analysis.



**Figure A-3. Property and Surrounding Area Showing All Drill Holes Reviewed**



The well records have been acquired in and around the subject Property and scanned to obtain a digital record. Of those 45, 10 are located on the Property and are shown in boldface type in Table A-1. The majority of holes penetrated the potash beds of interest. The log suites vary by hole and typically include some combination of lithology, caliper, gamma ray, neutron density, neutron, resistivity, and sonic logs. Typical readings of log responses for evaporite minerals are shown in Table A-2.

An established methodology developed by Schlumberger calculates  $K_2O\%$  by combining gamma ray API units, corrected hole diameter (from caliper logs), and mud weight (Figure A-4). Used in combination with the other logs, mineralogy may be determined. Naturally occurring radioactivity in the form of the potassium 40 isotope derived from the potassium in the potash beds give a characteristic signature that is used to correlate the different cycles and estimate grade. Experience has shown good agreement between the estimation when compared with assay. An equivalent rather than an assayed grade is expressed as  $eK_2O\%$ .

The results of those picks for Potash 13 and 18 are tabled with bed thickness and composited grade to be used with the assayed results in the model (Table A-3).

### **JORC Compliant Mineral Resource**

Prior to exploration drilling for potash, AAI (2011) estimated the Property hosted an Exploration Target in Potash 18 ranging between 3,000 and 4,600 million tonnes (Mt) of sylvinitic at an average grade ranging between 15% and 22%  $K_2O$  (potassium oxide). An Exploration Target in Potash 13 was estimated to range between 400- and 600-Mt sylvinitic at an average grade ranging between 12% and 17%  $K_2O$ .

In 2011, Potash Minerals developed plans to drill up to four potash exploration holes on state leases to define the resource in the central part of the Property. Three holes were drilled between 8 September 2011 and 25 January 2012. The continuity of Potash 18 and Potash 13 was confirmed in all holes. Thinner than expected potash was encountered in the westernmost hole drilled into the centre of the major east-west trending graben crossing through the centre of the Property. The bed thinning in Potash 18 is potentially related to salt movement within the graben, channelisation of dissolution fluids, or other influences local to the graben.

The other two exploration holes drilled nearer to the east and south Property boundaries identified attractive sylvinitic showings in Potash 13. Potash 18 was discovered to be relatively thick and carnallitic in both holes, suggesting a continuation of carnallitic mineralisation onto the Property from distant oil wells to the east and southeast off the Property previously known to contain carnallite.



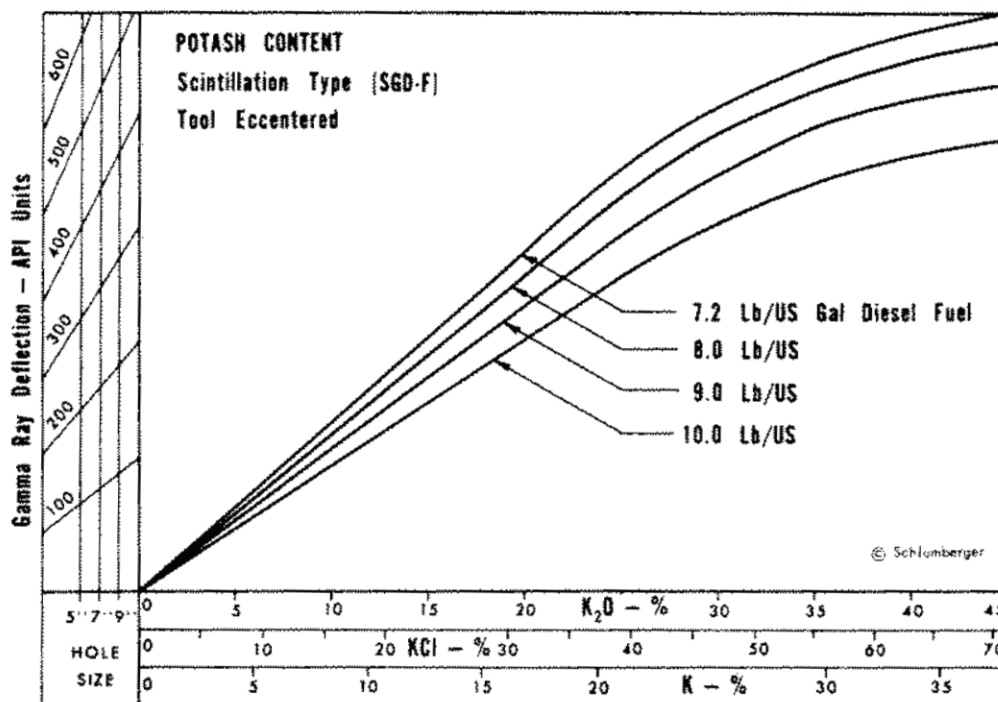
**Table A-1. Reviewed Records for Wells In and Around the Property**

Hole Name	Coordinates		Elevation (KB-ft)
	Easting	Northing	
APACHE FEDERAL 1	645252.78	4226693.77	5,930.0
BEHIND THE ROCKS UNIT 1	629459.00	4252973.00	5,491.0
BIG INDIAN UNIT 5	649321.00	4234528.00	6,779.0
CANE CREEK ST 1-36	616151.00	4251821.00	5,883.6
CHEVRON FED 1	645850.00	4236669.00	6,522.0
FEDERAL 15-25	645526.00	4234651.00	6,248.0
<b>FEDERAL HATCH 1</b>	<b>621227.00</b>	<b>4242745.00</b>	<b>5,876.5</b>
FLAT IRON UNIT 1	632675.00	4248534.00	5,226.0
GIBSON DOME GD-1	621272.00	4224841.00	4,931.0
GIBSON DOME ST 1-2	614098.00	4229625.00	4,875.0
GIBSON DOME-GOVT 1	614748.00	4231458.00	4,558.0
GOVERNMENT B-1	632812.00	4243312.00	5,787.0
GULF AZTEC LOCKHART-FED 1	612371.00	4245231.00	4,530.0
HATCH MESA 1	622462.00	4245407.00	5,998.0
<b>HATCH POINT 1</b>	<b>624920.00</b>	<b>4237383.00</b>	<b>6,390.0</b>
<b>HATCH POINT 13-16-29-22</b>	<b>630218.99</b>	<b>4237141.91</b>	<b>5,896.2</b>
<b>HATCH POINT 1-36-29-21</b>	<b>626522.45</b>	<b>4233538.66</b>	<b>6,228.4</b>
<b>HATCH POINT 16-16-29-21</b>	<b>621773.83</b>	<b>4236988.21</b>	<b>6,011.4</b>
HATCH POINT FED 22-33H	620638.00	4252283.00	5,617.0
HATCH WASH U 1	646509.71	4223450.77	5,813.0
<b>HORSEHEAD UNIT 1</b>	<b>617302.00</b>	<b>4237447.00</b>	<b>6,199.0</b>
<b>HUSKY FED 6-15</b>	<b>622623.00</b>	<b>4237796.00</b>	<b>6,282.0</b>
LA SAL 29-28	639425.00	4234196.00	5,847.0
LION MESA 2-34	622171.00	4252073.00	5,480.0
LION MESA UNIT STATE 3-36A	615900.00	4251446.00	5,880.0
LOCKHART GOVT 1-3	612389.00	4240967.00	4,617.0
RECTOR FED 1	618752.00	4240718.00	4,530.0
RED ROCK UNIT 1	630652.00	4249502.00	5,436.0
RUSTLERS DOME U1	610876.00	4240580.00	4,638.0
STATE GULF 1	645086.00	4231377.00	5,948.0
<b>THREEMILE 12-7H</b>	<b>626123.00</b>	<b>4239233.00</b>	<b>6,208.0</b>
<b>THREEMILE 16-17</b>	<b>630194.00</b>	<b>4237735.00</b>	<b>5,892.0</b>
<b>THREEMILE 43-18H</b>	<b>628091.00</b>	<b>4237573.00</b>	<b>5,961.0</b>
USA LOCKHART 1	615212.00	4245046.00	4,586.0
GOVT LUNDELL 1	638416.00	4247105.00	5,749.0
MULESHOE FEDERAL 1	641204.00	4249939.00	6,400.0
USA CHARLES 1	617623.00	4242742.00	4,354.0

**Table A-1. Reviewed Records for Wells In and Around the Property**

Hole Name	Coordinates		Elevation (KB-ft)
	Easting	Northing	
BIG INDIAN UNIT 2	650548.92	4235393.82	6,753.0
BRIDGER JACK UNIT 2	631795.00	4254673.00	5,504.0
GOVT EVELYN CHAMBERS 1	647192.66	4221052.76	5,820.0
GOVT EVELYN CHAMBERS 2	647948.65	4220222.76	5,841.0
HART POINT FED 1	628675.59	4217871.74	6,556.0
HART POINT FED 1-22	631463.46	4214369.74	6,501.0
LOST CANYON USA 1	607913.00	4224033.00	5,009.0
REMINGTON 21-1H	640627.51	4214974.74	6,403.0

Note: KB = Kelly Bushing; **bold typeface indicates wells on Property**



**Figure A-4. Empirical Chart Relating Gamma Ray Deflection to Potassium Content** (after Schlumberger 1991; best available image)



**Table A-2. Geophysical Values for Evaporite Minerals** (after Schlumberger 1991)

Mineral	Composition	Specific Gravity (g/cc)	Log Density (g/cc)	Sonic (msec/ft)	Neutron (θN)	GNT (θN)	Gamma (API)	K <sub>2</sub> O (%)
Anhydrite	CaSO <sub>4</sub>	2.96	3.0	50.0	0.0	0	0	0.0
Carnallite	KCl•MgCl <sub>2</sub> •6H <sub>2</sub> O	1.61	1.6	78.0	65.0	65	200	17.0
Gypsum	CaSO <sub>4</sub> •2H <sub>2</sub> O	2.32	2.4	52.0	49.0		0	0.0
Halite	NaCl	2.17	2.0	67.0	0.0		0	0.0
Kainite	MgSO <sub>4</sub> •KCl•3H <sub>2</sub> O	2.13	1.1		45.0		225	18.9
Langbeinite	K <sub>2</sub> SO <sub>4</sub> •2MgO <sub>4</sub>	2.83	2.8	52.0	0.0		275	22.6
Polyhalite	K <sub>2</sub> SO <sub>4</sub> •MgSO <sub>4</sub> •2CaSO <sub>4</sub> •2H <sub>2</sub> O	2.78	2.8	57.5	15.0		180	15.5
Sylvite	KCl	1.98	1.9	74.0	0.0		500	63.0
Calcite	CaCO <sub>3</sub>	2.71	2.7	47.5	0.0		0	0.0
Dolomite	CaMg(CaO <sub>3</sub> ) <sub>2</sub>	2.87	2.9	43.5	4.0		0	0.0
Limestone		2.54	2.5	62.0	10.0		5–10	0.0
Dolomite		2.68	2.7	58.0	13.5		10–20	0.0
Shale			2.2–2.8	70–150	25–60		80–140	0.0

Notes: θN = apparent limestone porosity from a neutron log, API = American Petroleum Institute, GNT = gamma ray/neutron tool, msec/ft = millisecond per foot.



**Table A-3. Drill Hole Potash Intercepts**

Drill Hole ID		Coordinates (UTM NAD83)		Collar Elevation (m)		POTASH 13 UPPER BED			POTASH 13 LOWER BED			POTASH 18 UPPER BED			POTASH 18 LOWER BED		
						Depth Top of Bed (m)	Bed Thickness (m)	Composite Grade (eK <sub>2</sub> O%)	Depth Top of Bed (m)	Bed Thickness (m)	Composite Grade (eK <sub>2</sub> O%)	Depth Top of Bed (m)	Bed Thickness (m)	Composite Grade (eK <sub>2</sub> O%)	Depth Top of Bed (m)	Bed Thickness (m)	Composite Grade (eK <sub>2</sub> O%)
API No.	Name	Easting	Northing	Elev.	Datum												
43-037-10047	APACHE FEDERAL 1	645,253	4,226,694	1,807.5	KB	1,950.3	1.1	9.9	1,955.0	0.0		2,090.6	0.6	5.8	2,111.0	0.0	
43-037-30065	BEHIND THE ROCKS UNIT 1	629,459	4,252,973	1,673.7	KB	1,905.2	0.3	5.5	1,909.1	0.0		1,974.3	0.8	6.3	1,982.7	0.0	
43-037-11346	BIG INDIAN UNIT 5	649,321	4,234,528	2,066.2	KB	1,876.8	0.9	6.0	1,881.4	0.0		2,172.3	1.1	6.9	2,190.3	0.0	
43-037-31631	CANE CREEK ST 1-36	616,151	4,251,821	1,793.3	KB	1,761.7	0.0		1,766.9	2.1	7.4	1,901.6	4.3	7.0	1,915.1	0.0	
43-037-30005	CHEVRON FED 1	645,850	4,236,669	1,987.9	KB	2,043.4	0.0		2,047.0	0.0		2,348.2	0.0		2,360.1	0.0	
43-037-30317	FEDERAL 15-25	645,526	4,234,651	1,904.4	KB	2,042.2	0.0		2,045.1	1.7	7.4	2,188.5	1.8	7.2	2,200.7	0.0	
43-037-30016	FEDERAL HATCH 1	621,227	4,242,745	1,791.2	KB	1,691.9	0.0		1,695.6	0.0		1,842.8	3.4	11.2	1,858.1	0.0	
43-037-11348	FLAT IRON UNIT 1	632,675	4,248,534	1,592.9	KB	1,741.0	0.0		1,743.9	1.7	7.9	1,818.6	0.8	5.7	1,831.2	0.0	
No API	GIBSON DOME GD-1	621,272	4,224,841	1,503.0	KB	1,192.9	1.9	16.5	1,198.5	0.0		1,349.8	2.5	21.6	1,364.6	0.0	
43-037-20322	GIBSON DOME ST 1-2	614,098	4,229,625	1,485.9	KB	1,048.8	3.5	13.4	1,056.0	0.0		1,216.2	4.1	15.0	1,233.7	1.2	8.3
43-037-10970	GIBSON DOME-GOVT 1	614,748	4,231,458	1,389.3	KB	1,020.0	5.2	8.0	1,028.9	0.0		1,197.1	6.6	12.7	1,219.7	2.9	10.0
43-037-10699	GOVERNMENT B-1	632,812	4,243,312	1,763.9	KB	1,830.2	0.2	5.2	1,835.4	1.1	5.4	1,983.6	0.8	7.9	1,996.7	0.0	
43-037-10439	GULF AZTEC LOCKHART-FED 1	612,371	4,245,231	1,380.7	KB	1,062.2	3.8	7.4	1,069.7	0.0		1,222.1	3.4	11.9	1,239.2	1.4	12.1
43-037-10982	HATCH MESA 1	622,462	4,245,407	1,828.2	KB	1,762.2	0.6	5.4	1,766.0	2.7	8.0	1,905.0	0.0		1,920.2	0.0	
43-037-31658	HATCH POINT 1	624,920	4,237,383	1,947.7	KB	1,866.0	3.0	10.8	1,872.7	0.0		2,007.4	5.3	13.1	2,023.9	0.0	
No API	HATCH POINT 13-16-29-22	630,219	4,237,142	1,797.2	KB	1,857.9	2.7	7.4	1,864.3	2.7	13.6	2,014.1	6.7	10.0	2,031.5	0.0	
No API	HATCH POINT 1-36-29-21	626,522	4,233,539	1,898.4	KB	1,907.4	0.3	13.6	1,910.5	3.7	12.9	2,065.0	8.8	10.5	2,086.7	2.7	15.2
No API	HATCH POINT 16-16-29-21	621,774	4,236,988	1,832.3	KB	1,745.5	0.3	13.1	1,749.4	0.0		1,890.7	0.6	15.6	1,905.6	0.0	
43-037-31630	HATCH POINT FED 22-33H	620,638	4,252,283	1,712.1	KB	1,773.2	1.4	7.3	1,779.6	2.4	8.9	1,925.9	2.0	7.4	1,940.1	0.0	
43-037-10526	HATCH WASH U 1	646,510	4,223,451	1,771.8	KB	1,874.8	0.8	7.0	1,879.2	0.0		2,020.8	8.1	7.1	2,040.6	0.0	
43-037-11352	HORSEHEAD UNIT 1	617,302	4,237,447	1,889.5	KB	1,634.8	0.6	6.0	1,639.1	0.0		1,747.6	1.1	7.5	1,757.8	6.1	11.8
43-037-30211	HUSKY FED 6-15	622,623	4,237,796	1,914.8	KB	1,742.5	3.8	15.9	1,750.0	0.0		1,912.9	5.5	23.7	1,931.7	5.5	19.3
43-037-50002	LA SAL 29-28	639,425	4,234,196	1,782.2	KB	2,120.5	0.9	6.5	2,124.6	1.7	9.2	2,254.9	7.3	7.8	2,271.7	0.0	
43-037-30559	LION MESA 2-34	622,171	4,252,073	1,670.3	KB	1,610.1	1.1	7.4	1,614.8	0.0		1,758.1	2.4	7.9	1,773.0	0.0	
43-037-30725	LION MESA UNIT STATE 3-36A	615,900	4,251,446	1,792.2	KB	1,732.3	2.3	5.6	1,736.8	4.1	6.8	1,868.7	5.3	7.3	1,886.1	0.0	
43-037-30204	LOCKHART GOVT 1-3	612,389	4,240,967	1,407.3	KB	999.1	0.8	6.0	1,002.6	3.0	9.1	1,112.8	3.2	12.7	1,126.2	3.4	16.6
43-037-30458	RECTOR FED 1	618,752	4,240,718	1,380.7	KB	1,002.2	0.0		1,005.8	0.0		1,140.0	2.3	14.2	1,150.2	4.7	14.4
43-037-31088	RED ROCK UNIT 1	630,652	4,249,502	1,656.9	KB	1,734.9	0.3	5.3	1,739.6	1.5	8.4	1,854.1	2.3	7.3	1,866.6	0.0	
43-037-10571	RUSTLERS DOME U1	610,876	4,240,580	1,413.7	KB	924.2	0.0		927.8	0.0		1,043.5	2.7	9.3	1,058.0	3.7	13.1
43-037-30044	STATE GULF 1	645,086	4,231,377	1,813.0	KB	2,201.4	1.1	6.9	2,206.1	0.0		2,339.5	5.8	5.8	2,361.6	0.0	
43-037-50001	THREEMILE 12-7H	626,123	4,239,233	1,892.2	KB	1,829.1	2.7	6.8	1,835.2	2.7	9.0	1,994.2	4.7	11.6	2,009.5	0.0	
43-037-50003	THREEMILE 16-17	630,194	4,237,735	1,795.9	KB	1,854.1	0.0		1,857.8	0.0		2,003.6	6.9	8.7	2,024.2	0.0	
43-037-31857	THREEMILE 43-18H	628,091	4,237,573	1,816.9	KB	1,846.8	0.0		1,850.4	0.0		2,015.5	3.7	16.8	2,031.2	0.0	
43-037-10849	USA LOCKHART 1	615,212	4,245,046	1,397.8	KB	1,021.8	0.6	5.6	1,026.1	0.0		1,147.3	3.4	9.8	1,166.2	2.3	11.5
43-037-10860	USA CHARLES 1	617,623	4,242,742	1,327.1	KB	1,036.3	0.0		1,040.0	0.0		1,066.8	0.0		1,072.9	0.0	

KB = Kelly Bushing, GL = Ground Level

Thickness (m) and grade (K<sub>2</sub>O%) from core assay



Assays from the core holes and elogs from the petroleum wells revealed that the carnallite grade is variable, ranging from potentially mineable to sub-marginal for solution mining.

Based on the results of the 2011–12 exploration drilling, combined with analyses of elogs from local petroleum wells and assays from one nearby 1980s-vintage scientific core hole, current estimates are that the Property hosts a combined JORC Mineral Resource in Potash 18 and Potash 13 totalling 121.7 Mt of Measured and Indicated potash averaging 11.8%  $K_2O$ , based on a bed thickness cut-off of 2.0 metres (m) and a grade cut-off of 10.0%  $K_2O$ . An additional 780.7 Mt averaging 12.9%  $K_2O$  of potash is classified as Inferred.

Table A-4 summarises the total Mineral Resource estimated in Potash 13 Upper, 13 Lower, 18 Upper, and 18 Lower. Potash mineralisation is identified as either sylvinitic or carnallite. The Mineral Resource is reported on a dry tonnage basis. Numerical estimates of potash mineralisation are based on computerised geologic block modelling.

Modelled bed isopach maps are presented in Figures A-5 through A-8 for Potash 13 Upper, 13 Lower, 18 Upper, and 18 Lower, respectively. Composite  $K_2O$  grade maps are presented in Figures A-9 through A-12 for the corresponding beds.

Mineral Resource classification areas identified in Table A-4 are shown on the maps in Figures A-13 through A-16 for the respective beds.

Table A-5 compares the resource estimate at higher grade cut-offs. The resource includes a proportion of higher grade sylvinitic comprising 303 Mt at 15.4%  $K_2O$  (24.4% KCl) average grade, and within this 104 Mt at 18.9%  $K_2O$  (30% KCl) average grade.

**The reader is cautioned that a Mineral Resource is an estimate only and not a precise and completely accurate calculation, being dependent on the interpretation of limited information on the location, shape, and continuity of the occurrence and on the available sampling results. Actual mineralisation can be more or less than estimated depending upon actual geological conditions.**

**The Mineral Resource statement includes Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there can be no certainty that further exploration work will result in the determination of Indicated or Measured Mineral Resources. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. No Mineral Reserves are being stated.**





## Conclusions

The HPPP Property contains significant potash mineralisation in sufficient quantities and of sufficient grade to be a potentially attractive target for solution mining under current market conditions, notwithstanding the ordinary risk inherent to proving and developing any mining property.

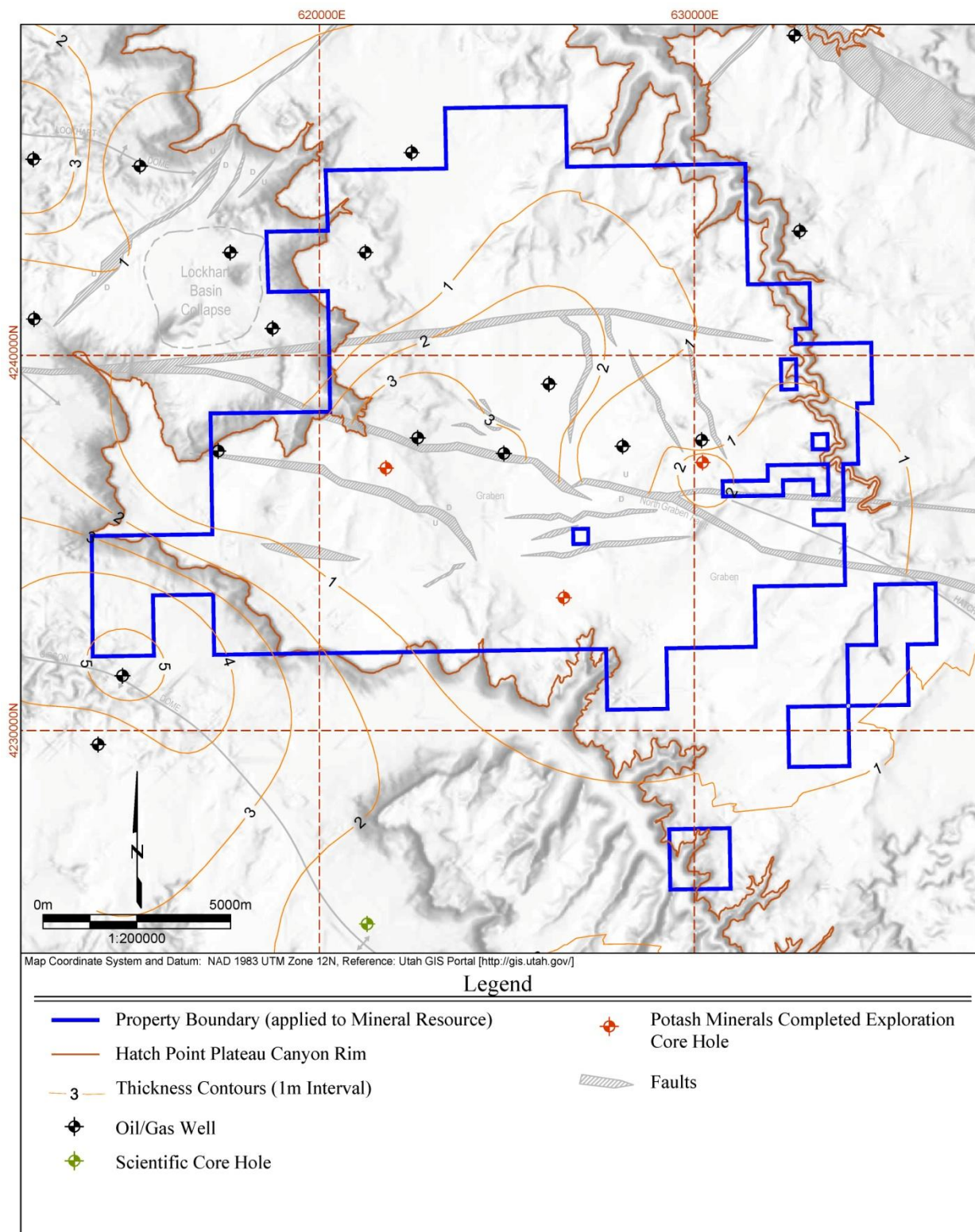
**Table A-4. Mineral Resource Estimate** (effective date 10 May 2013)

Bed	Mineralogy	Average Thickness (m)	Resource Area (km <sup>2</sup> )	In-Place Tonnes (M) <sup>1,2</sup>	K <sub>2</sub> O (wt %)	KCl (wt %)
<b>Measured<sup>3</sup></b>						
P13 Upper	Sylvinite	-	-	-	-	-
P13 Lower	Sylvinite	3.2	0.87	5.0	12.9	20.4
P18 Upper	Sylvinite	-	-	-	-	-
	Carnallite	8.8	0.51	6.9	10.5	16.6
P18 Lower	Sylvinite	-	-	-	-	-
	Carnallite	2.7	0.51	1.9	15.2	24.1
<b>Total Measured</b>				<b>13.8</b>	<b>12.0</b>	<b>19.0</b>
<b>Indicated<sup>4</sup></b>						
P13 Upper	Sylvinite	-	-	-	-	-
P13 Lower	Sylvinite	3.4	4.91	29.5	12.6	20.0
P18 Upper	Sylvinite	-	-	-	-	-
	Carnallite	8.4	4.85	63.0	10.5	16.7
P18 Lower	Sylvinite	-	-	-	-	-
	Carnallite	2.7	4.05	15.5	15.1	24.0
<b>Total Indicated</b>				<b>107.9</b>	<b>11.7</b>	<b>18.8</b>
<b>Inferred<sup>5</sup></b>						
P13 Upper	Sylvinite	3.3	7.31	42.4	12.9	20.5
P13 Lower	Sylvinite	3.4	10.59	64.4	12.1	19.2
P18 Upper	Sylvinite	4.4	45.24	353.9	14.0	22.2
	Carnallite	7.9	14.09	170.9	10.7	17.0
P18 Lower	Sylvinite	4.9	12.53	108.1	13.0	20.7
	Carnallite	2.6	11.04	41.0	14.3	22.7
<b>Total Inferred</b>				<b>780.7</b>	<b>12.9</b>	<b>20.5</b>
<b>Total Measured, Indicated &amp; Inferred</b>				<b>902.4</b>	<b>12.8</b>	<b>20.3</b>

"-" indicates no significant mineralisation identified.

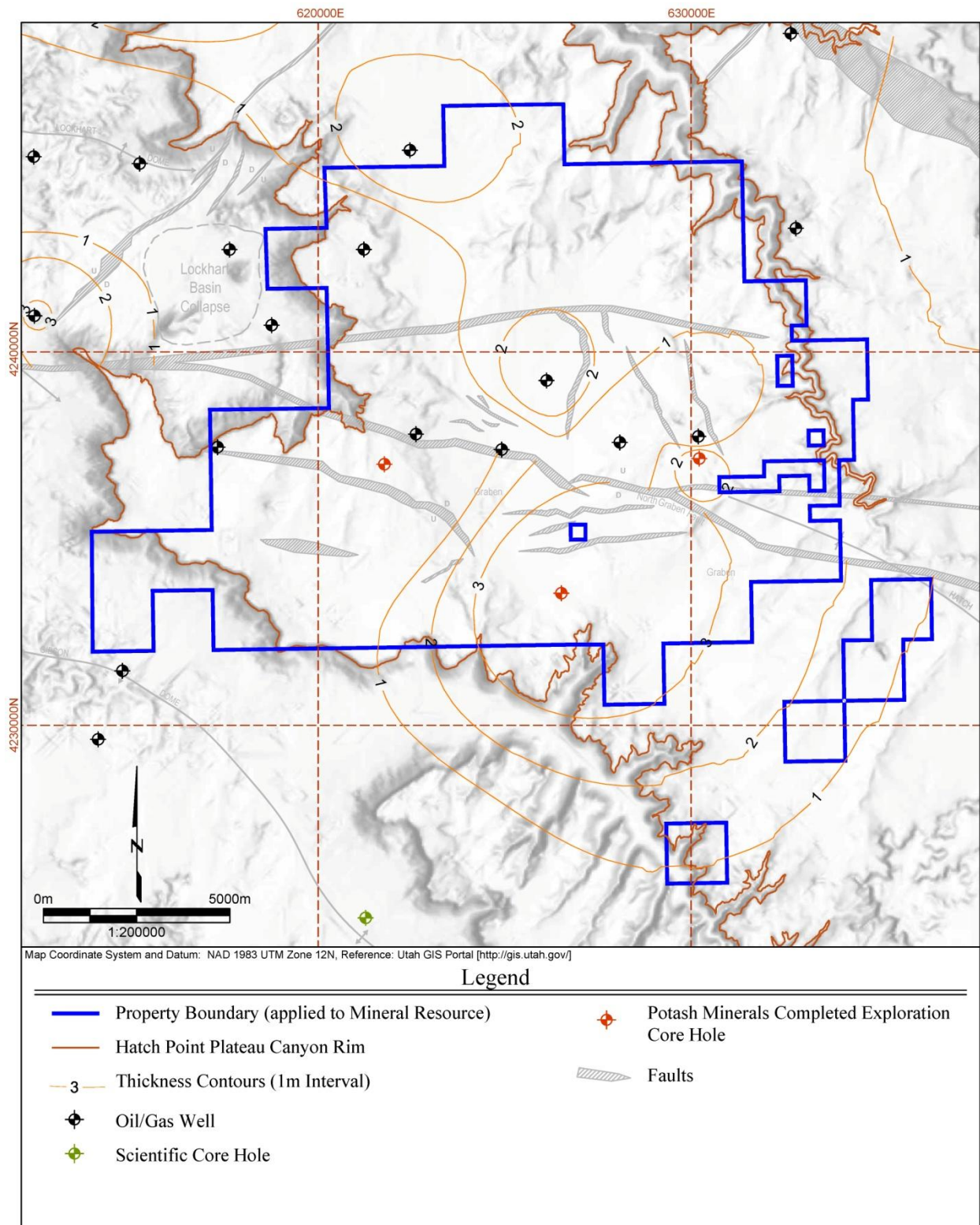
1. Average bulk density of sylvinite 2.08 t/m<sup>3</sup>. Carnallite bulk density varies by grade; potential range 1.61 to 2.17 t/m<sup>3</sup>.
2. Bed thickness cut-off 2.0 m and composite grade cut-off of 10.0% K<sub>2</sub>O.
3. Measured Resource located within 400-m radius from an exploration hole.
4. Indicated Resource located between 400-m and 1,200-m radius from an exploration hole.
5. Inferred Resource located between 1,200-m and 2,400-m radius from an exploration hole.

Note: See appendix for detailed analysis of the Mineral Resource with geology, estimation methodology, and accompanying tables.



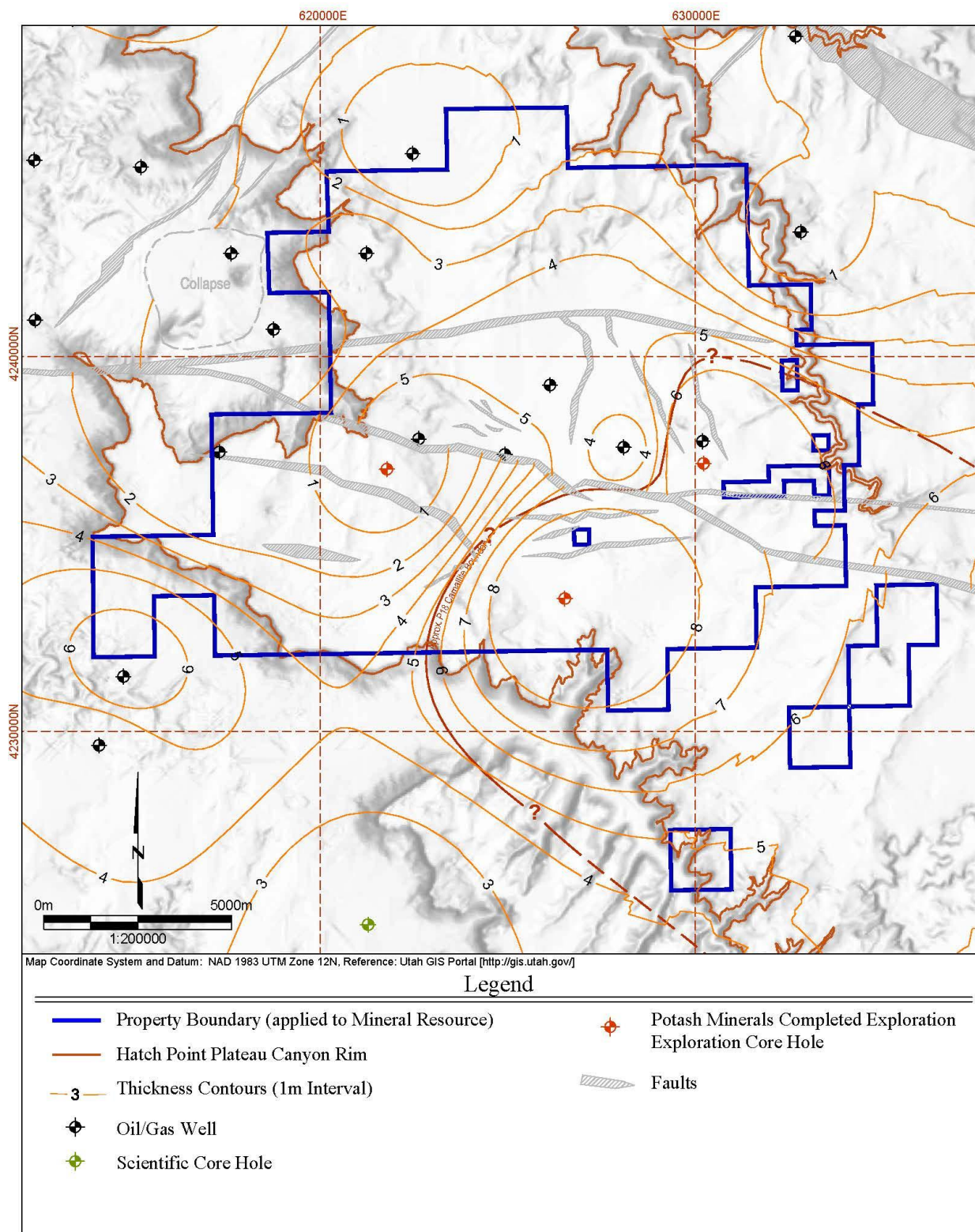
706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: Thk\_P13U]:smvf (6-11-2013)

**Figure A-5. Bed Thickness—Potash 13 Upper**



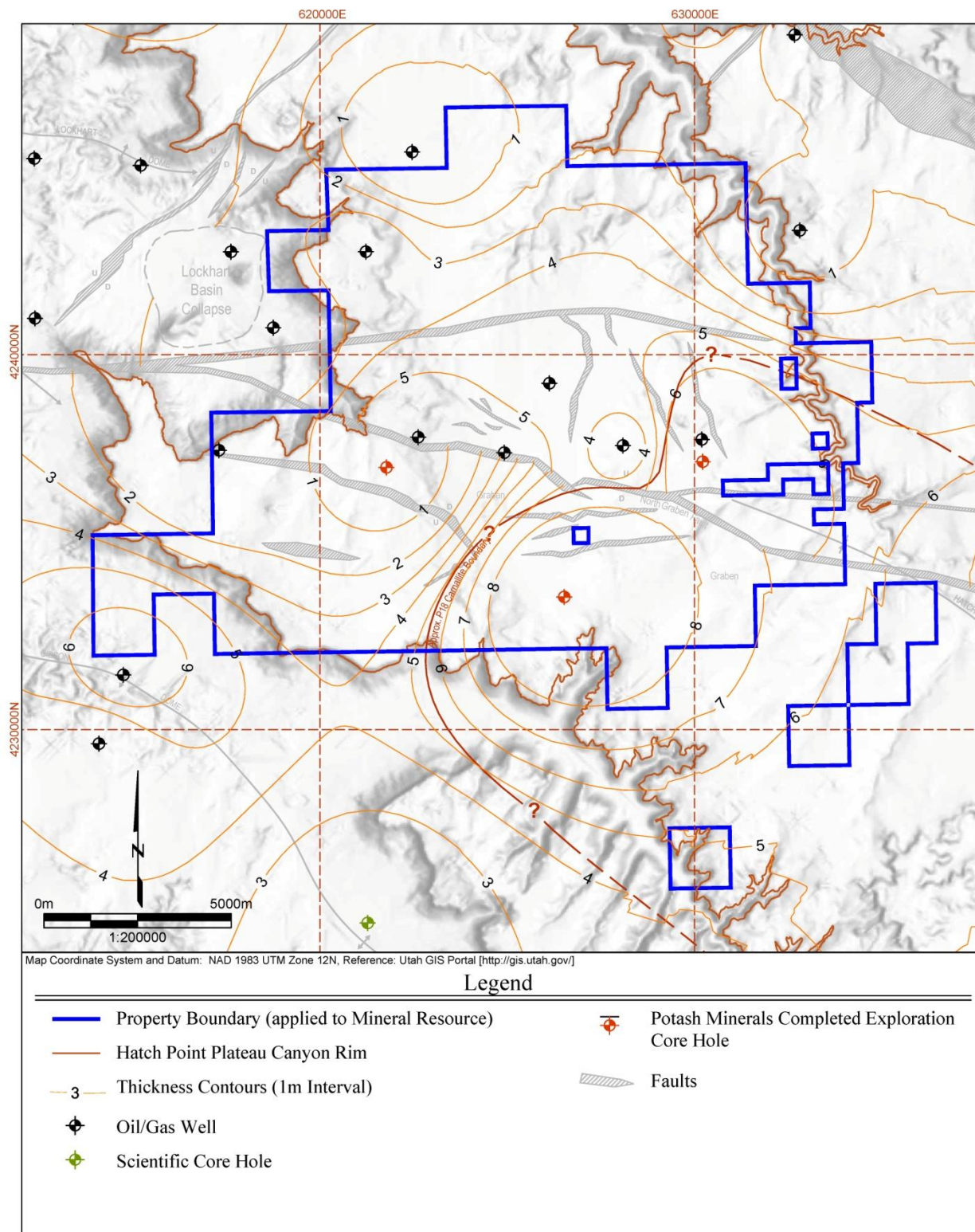
706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: Thk\_P13L].smvf (6-11-2013)

**Figure A-6. Bed Thickness—Potash 13 Lower**



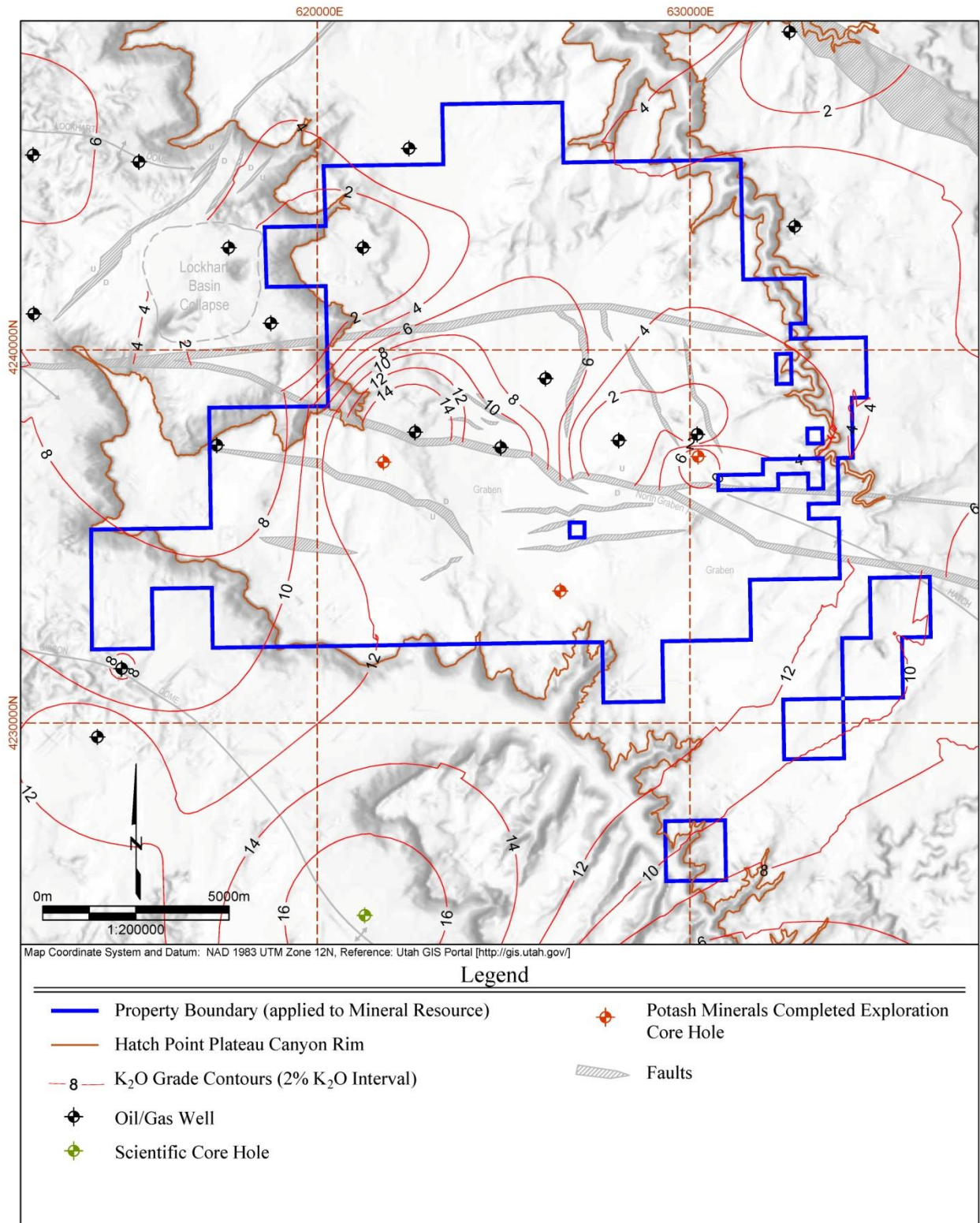
706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: Thk\_P18L].smvf (6-10-2013)

**Figure A-7. Bed Thickness—Potash 18 Upper**



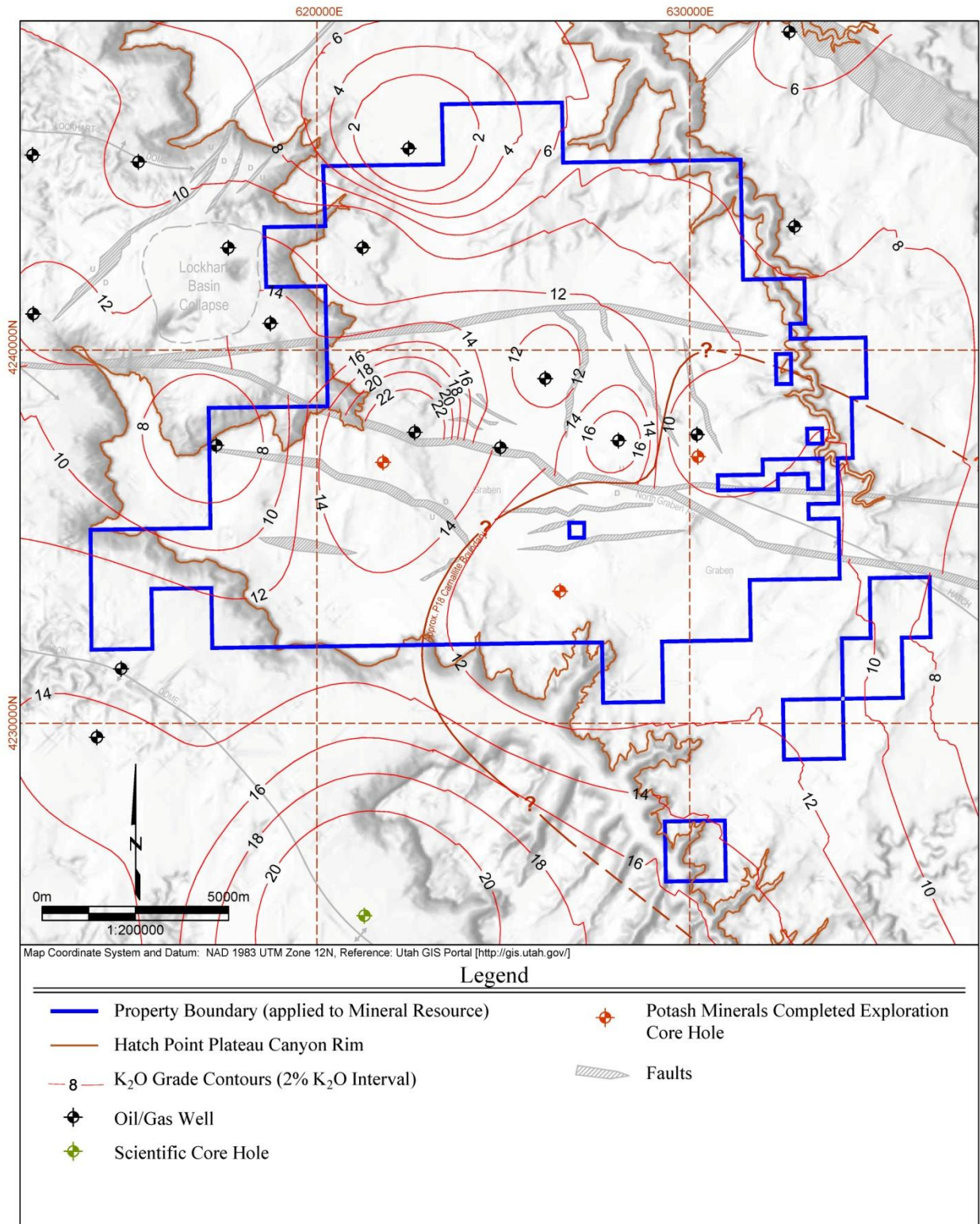
706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg, Layout: Thk\_P18L].smvf (6-11-2013)

**Figure A-8. Bed Thickness—Potash 18 Lower**



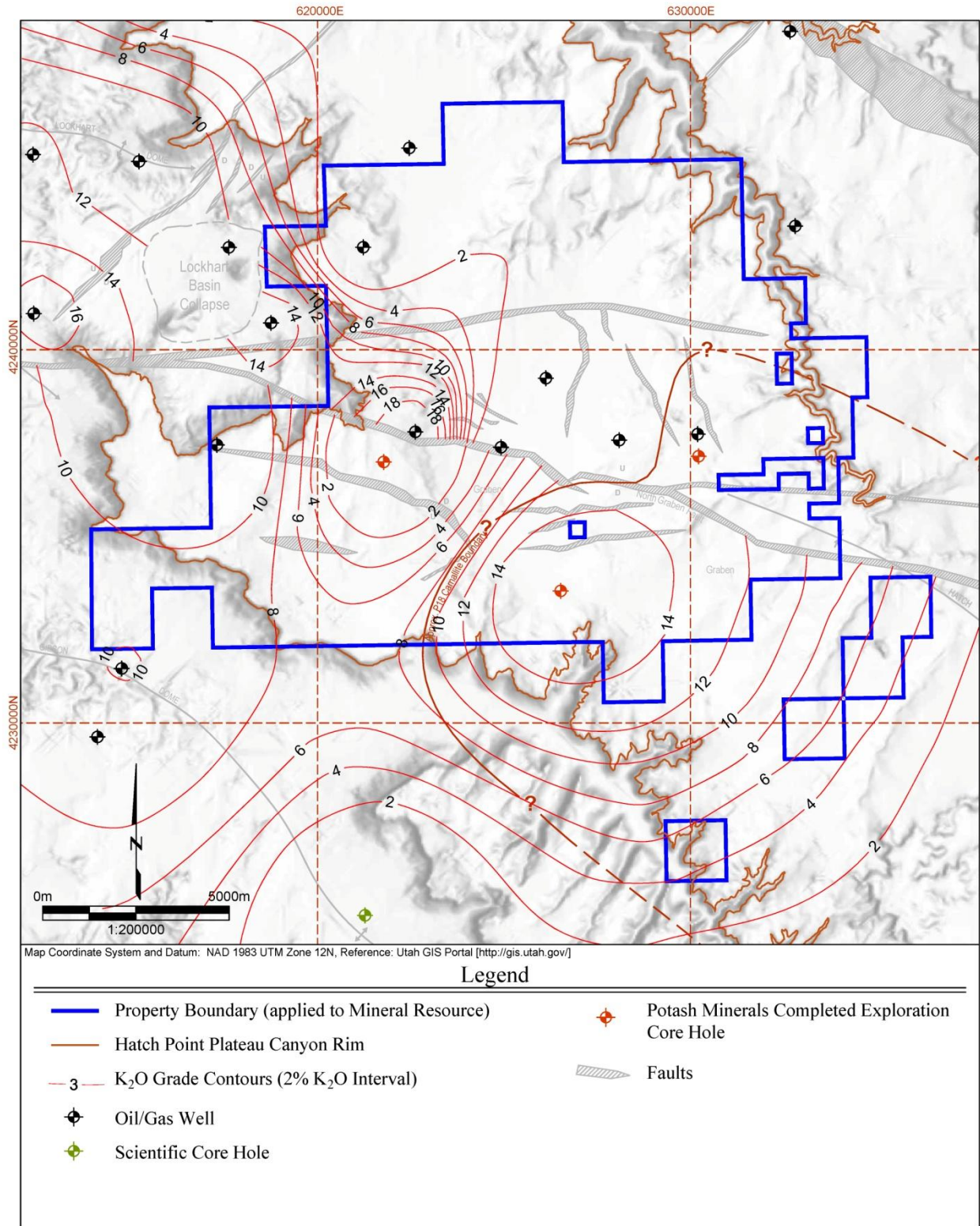
706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: K2O\_P13U].smvf (6-11-2013)

**Figure A-9. Bed K<sub>2</sub>O Grade—Potash 13 Upper**



706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: Thk\_P18L].smvf (6-11-2013)

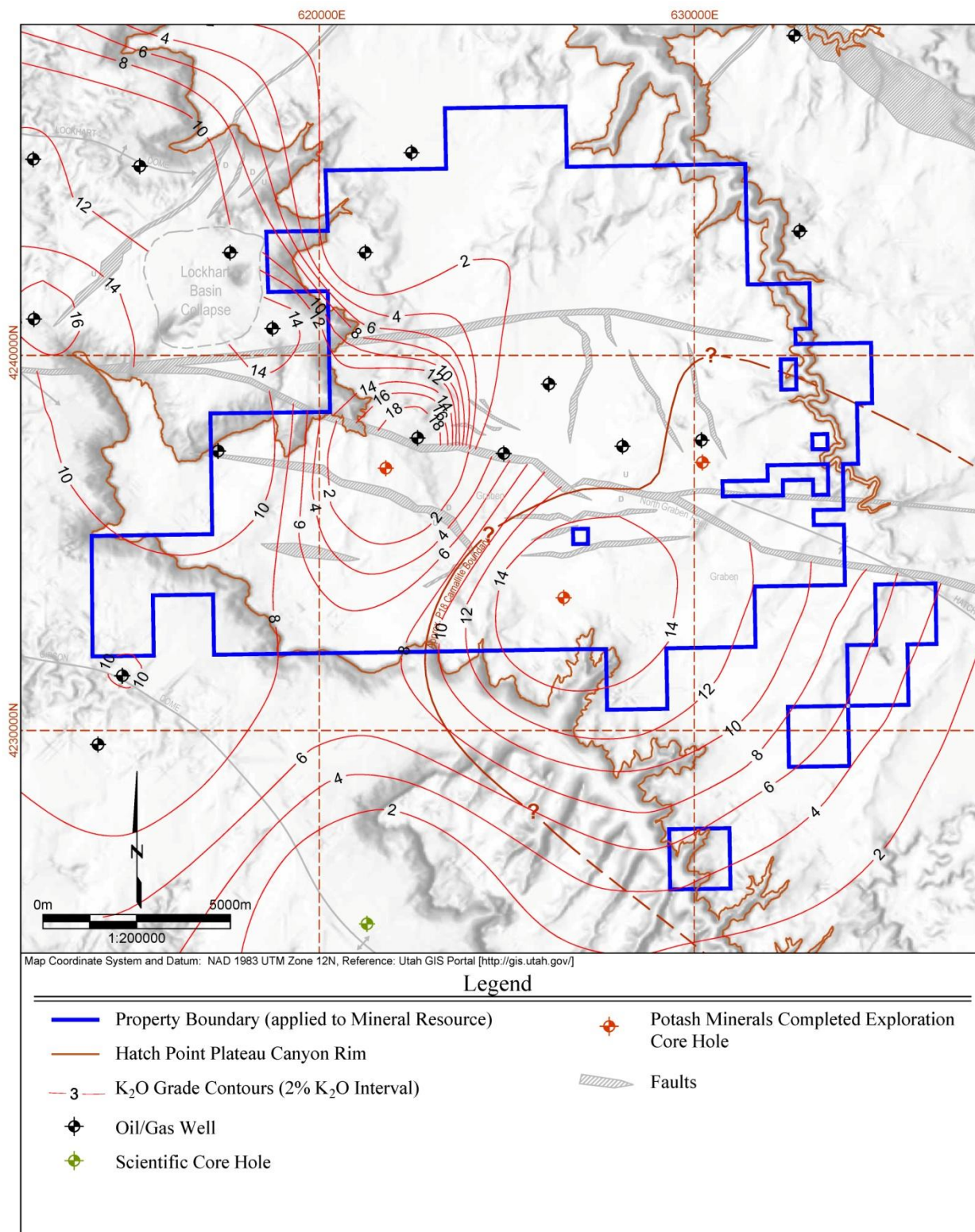
**Figure A-10. Bed K<sub>2</sub>O Grade—Potash 13 Lower**



706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: K2O\_P18L].smvf (6-11-2013)

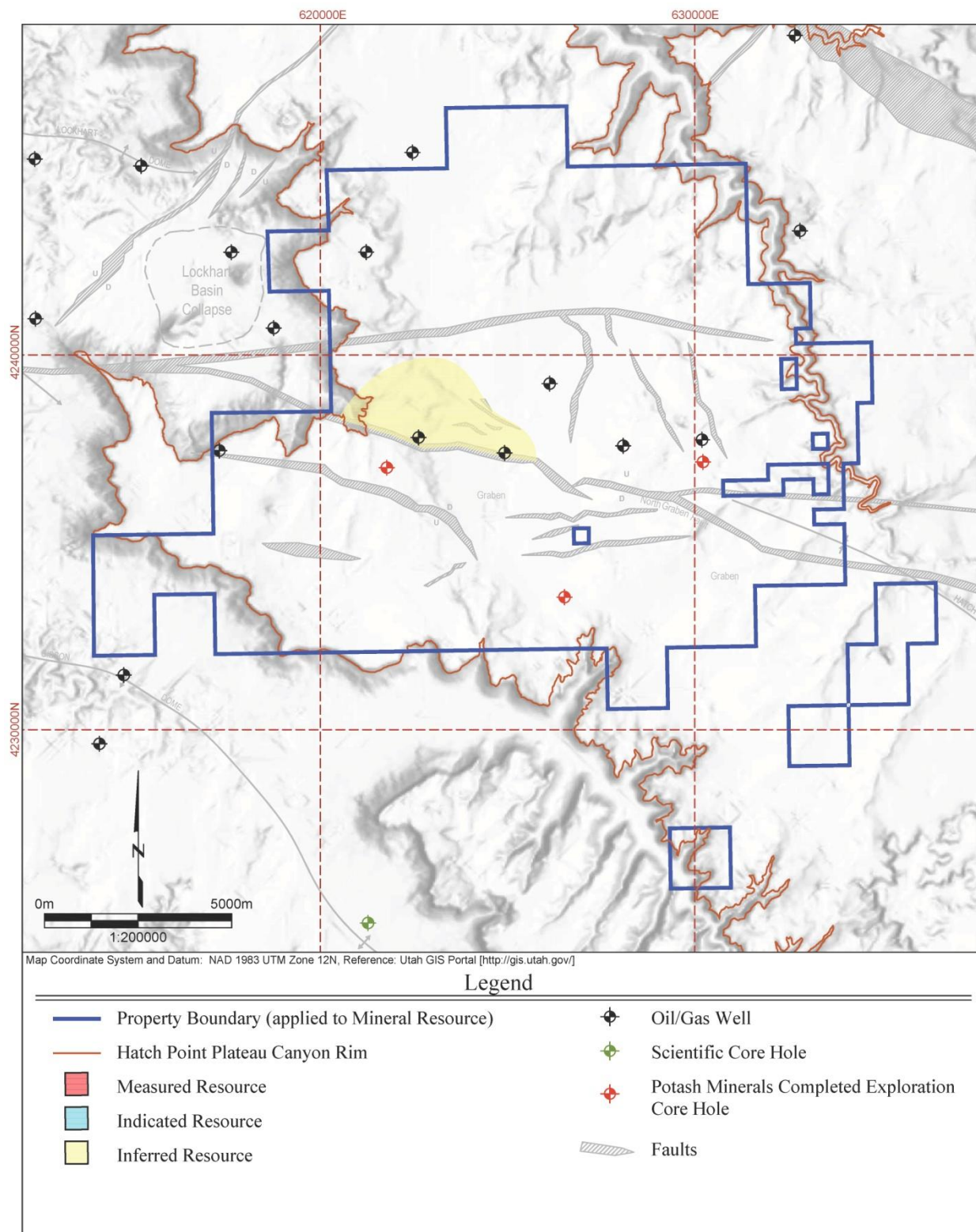
**Figure A-11. Bed K<sub>2</sub>O Grade—Potash 18 Upper**





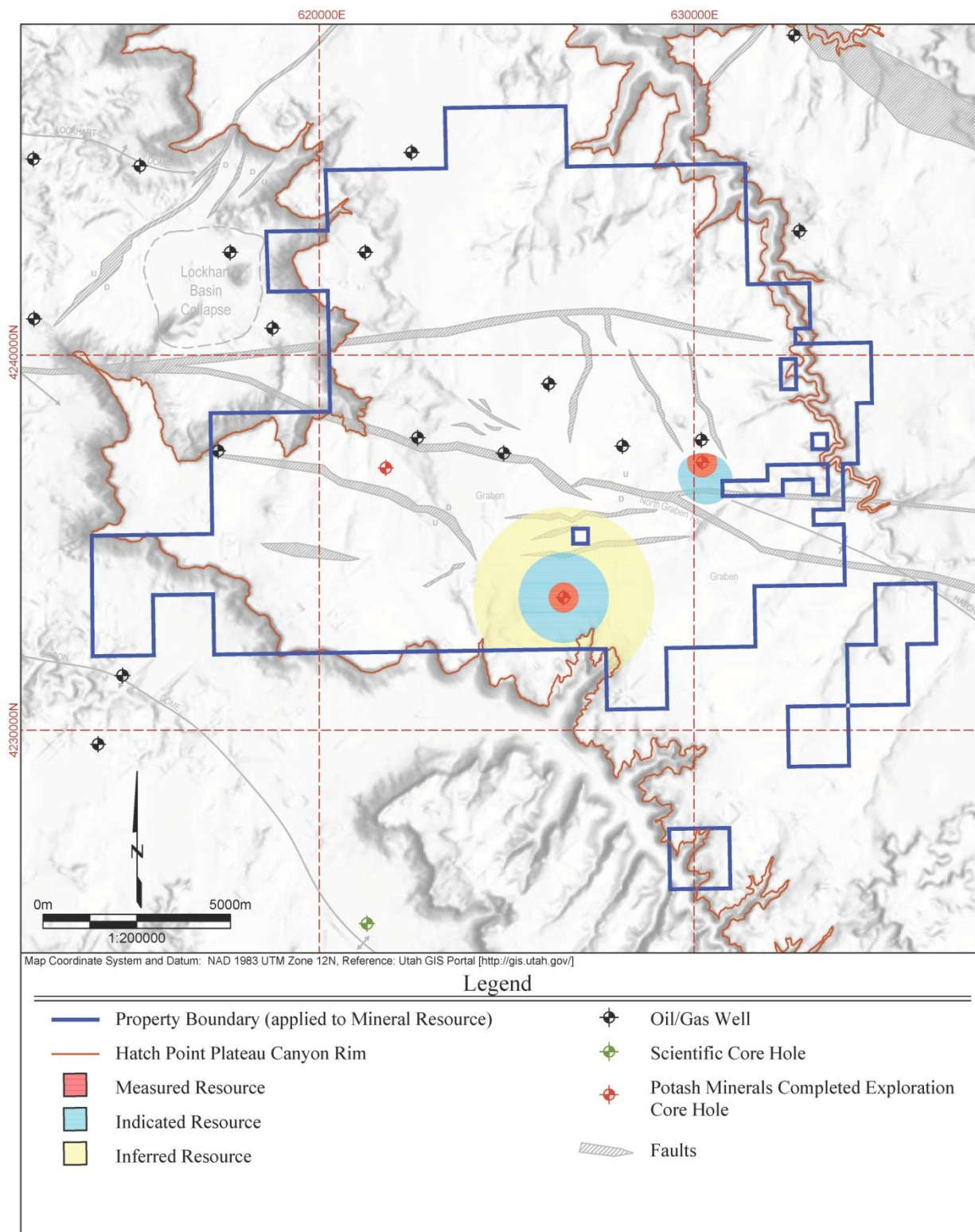
706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: K2O\_P18L].smvf (6-11-2013)

**Figure A-12. Bed K<sub>2</sub>O Grade—Potash 18 Lower**



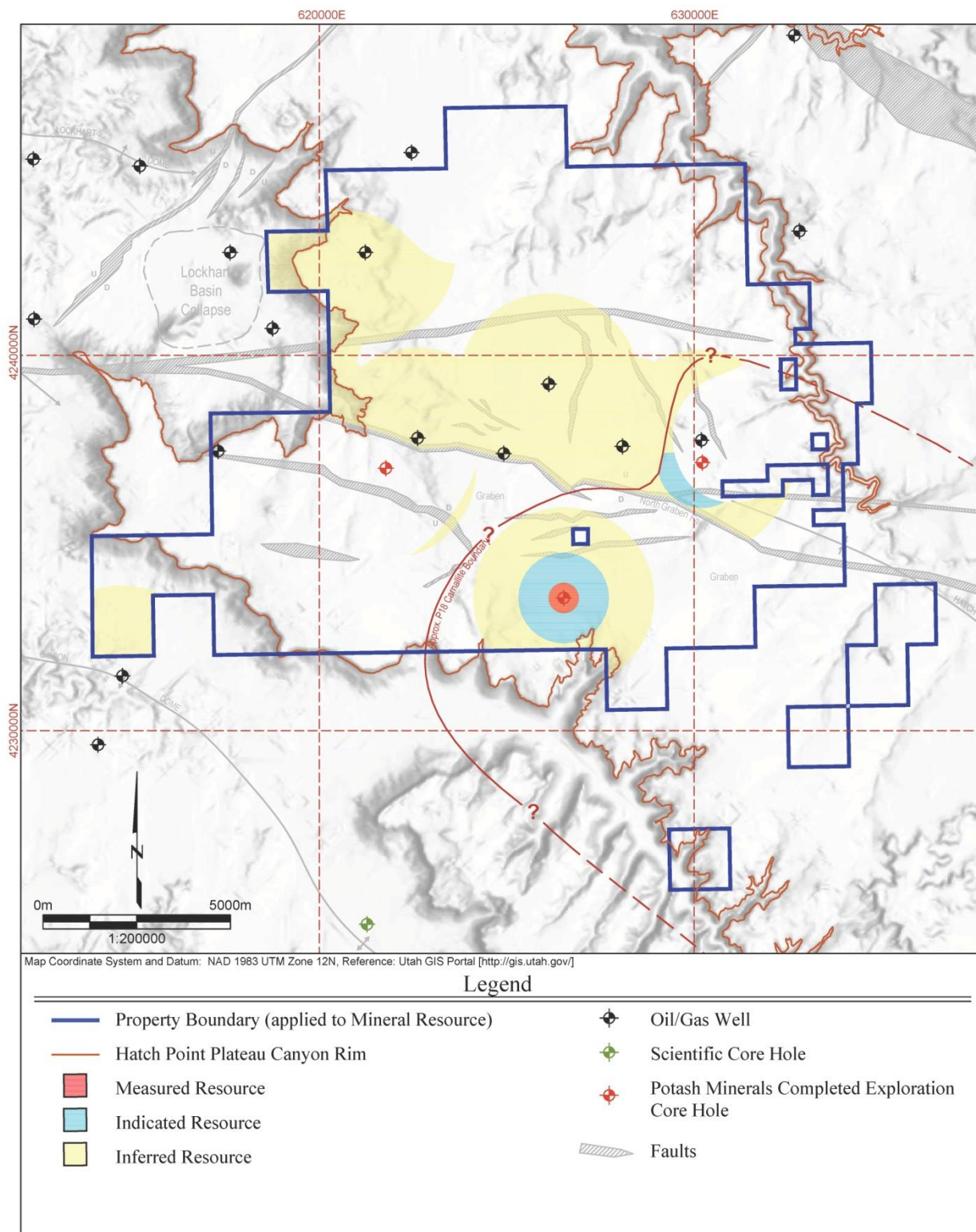
706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: Resource\_P13U];smvf (6-11-2013)

**Figure A-13. Mineral Resource Classification Areas—Potash 13 Upper**



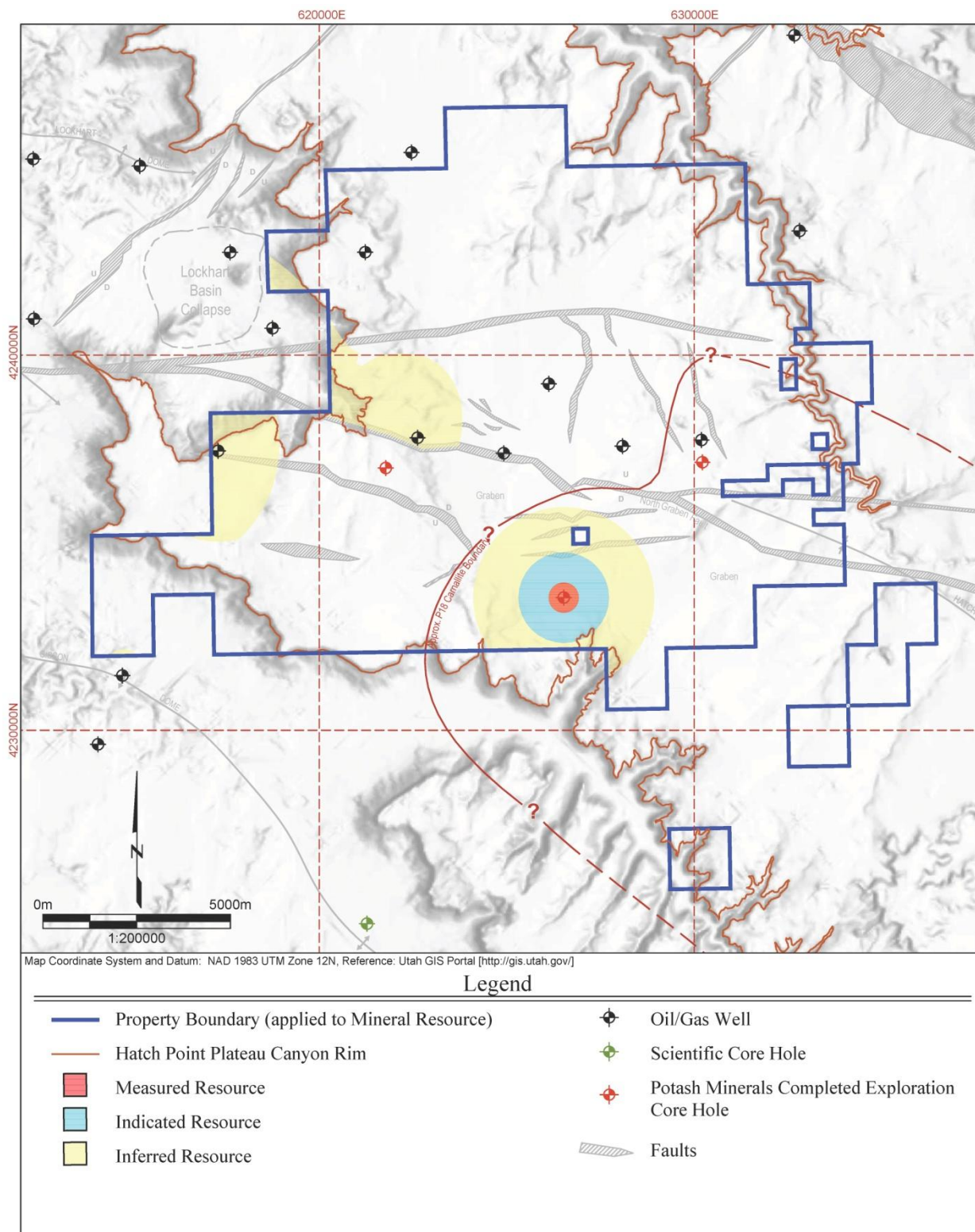
706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: Resource\_P13L]smvf (6-11-2013)

**Figure A-14. Mineral Resource Classification Areas—Potash 13 Lower**



706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: Resource\_P18L].smvf (6-11-2013)

**Figure A-15. Mineral Resource Classification Areas—Potash 18 Upper**



706-02 Potash Minerals [706-02 Potash Minerals\_Resource Figures.dwg; Layout: Resource\_P18L].smvf (6-11-2013)

**Figure A-16. Mineral Resource Classification Areas—Potash 18 Lower**



**Table A-5. Mineral Resource Equivalent at Variable Grade Cut-offs<sup>†</sup>** (effective date 10 May 2013)

In-Place Grade Cut-off	Sylvinite			Carnallite			Total		
	In-Place Tonnes (M)	K <sub>2</sub> O (wt %)	KCl (wt %)	In-Place Tonnes (M)	K <sub>2</sub> O (wt %)	KCl (wt %)	In-Place Tonnes (M)	K <sub>2</sub> O (wt %)	KCl (wt %)
<b>MEASURED EQUIVALENT</b>									
10% K <sub>2</sub> O (15.9% KCl)	5.0	12.9	20.4	8.9	11.5	18.2	13.8	12.0	19.0
12.6% K <sub>2</sub> O (20% KCl)	4.2	12.9	20.6	1.9	15.2	24.1	6.1	13.7	21.7
15% K <sub>2</sub> O (23.8% KCl)	0.0	0.0	0.0	1.9	15.2	24.1	1.9	15.2	24.1
15.8% K <sub>2</sub> O (25% KCl)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.9% K <sub>2</sub> O (30% KCl)	0.0	0.0	0.0				0.0	0.0	0.0
<b>INDICATED EQUIVALENT</b>									
10% K <sub>2</sub> O (15.9% KCl)	29.5	12.6	20.0	78.4	11.4	18.1	107.9	11.7	18.6
12.6% K <sub>2</sub> O (20% KCl)	24.8	12.8	20.3	15.5	15.1	24.0	40.3	13.7	21.7
15% K <sub>2</sub> O (23.8% KCl)	0.0	0.0	0.0	13.6	15.1	24.0	13.6	15.1	24.0
15.8% K <sub>2</sub> O (25% KCl)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.9% K <sub>2</sub> O (30% KCl)	0.0	0.0	0.0				0.0	0.0	0.0
<b>MEASURED &amp; INDICATED EQUIVALENT</b>									
10% K <sub>2</sub> O (15.9% KCl)	34.4	12.6	20.2	87.3	11.4	18.2	121.7	11.8	18.8
12.6% K <sub>2</sub> O (20% KCl)	29.0	12.8	20.4	17.4	15.1	24.0	46.4	13.7	21.7
15% K <sub>2</sub> O (23.8% KCl)	0.0	0.0	0.0	15.5	15.1	24.1	15.5	15.1	24.1
15.8% K <sub>2</sub> O (25% KCl)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.9% K <sub>2</sub> O (30% KCl)	0.0	0.0	0.0				0.0	0.0	0.0
<b>INFERRED EQUIVALENT</b>									
10% K <sub>2</sub> O (15.9% KCl)	568.8	13.5	21.4	211.9	11.4	18.1	780.7	12.9	20.5
12.6% K <sub>2</sub> O (20% KCl)	274.5	15.6	24.8	38.5	14.5	23.0	313.0	15.5	24.6
15% K <sub>2</sub> O (23.8% KCl)	127.2	18.2	29.0	1.6	15.0	23.9	128.9	18.2	28.9
15.8% K <sub>2</sub> O (25% KCl)	103.8	18.9	30.0	0.0	0.0	0.0	103.8	18.9	30.0
18.9% K <sub>2</sub> O (30% KCl)	44.6	21.5	34.1				44.6	21.5	34.1
<b>MEASURED, INDICATED, &amp; INFERRED EQUIVALENT</b>									
10% K <sub>2</sub> O (15.9% KCl)	603.2	13.5	21.4	299.2	11.4	18.1	902.4	12.8	20.3
12.6% K <sub>2</sub> O (20% KCl)	303.5	15.4	24.4	55.9	14.7	23.3	359.4	15.3	24.2
15% K <sub>2</sub> O (23.8% KCl)	127.2	18.2	29.0	17.2	15.1	24.0	144.4	17.9	28.4
15.8% K <sub>2</sub> O (25% KCl)	103.8	18.9	30.0	0.0	0.0	0.0	103.8	18.9	30.0
18.9% K <sub>2</sub> O (30% KCl)	44.6	21.5	34.1				44.6	21.5	34.1

<sup>†</sup> Not stated as a JORC Mineral Resource.

The Property is an exploration property. The principal risk at the exploration stage is geologic uncertainty. Risks associated with the future feasibility of solution mining, which include engineering design, permitting, and environmental, socioeconomic and market constraints, are concerns to be evaluated at later stages. While core hole and petroleum well data indicate strong bed continuity across the Property, variations in potash thickness, grade, and mineralogy are possible. Faults, collapse features, diapirism, and other structural disturbances can sterilise resource locally. Sylvinite mineralogy can be affected by varying depositional environments or structure, including basement carbonate mounds, algal reefs, post-depositional gypsum dewatering, groundwater leaching along fault conduits, and by other complex depositional and structural features.



Halite intrusions are known to occur in the Paradox Basin and can degrade or eliminate potash resource on a localised or regional basis. Sylvite is considered the more desirable mineralogy compared to carnallite due to the higher percentages of  $K_2O$  found in the former. Sylvite has nominally 63%  $K_2O$  versus 17%  $K_2O$  for carnallite. Carnallite is increasingly being viewed as an attractive economic mineral, albeit with higher production costs. The loss of grade or introduction of problematic mineralogy can affect resource tonnes.

Potash Mineral's 2013 approved exploration plan targets a focused area which hosts reasonable geological potential. Infill and step-out drilling is warranted for Mineral Resource definition. Potash Minerals is positioned to file for and obtain PRLs once the Company can achieve a chiefly valued deposit determination by the BLM.

Lower priority drilling targets exist to the north, southwest, and southeast where the resource remains largely open. The mineral resource estimate for the HPPP has been carried out in accordance with the guidelines of the JORC code (2012 edition).

The criteria on which the mineral resource update was based are summarized in Table A-6 "*JORC (2012 edition) Checklist of Assessment and Reporting Criteria*".

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**Table A-6. JORC Checklist of Assessment and Reporting Criteria**

**Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>• <i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Core points for Cycles 13 and 18 were projected from regional wells ahead of drilling. Collected core over entire mineralised zone and collected cuttings over entire Paradox Formation halite zone.</li> <li>• On location, cuttings, ROP, and measurement while drilling (MWD) real-time gamma and drill cuttings were monitored to select the start of core drilling above the projected mineral zone, with a high degree of accuracy. Coring intervals were checked with down hole geophysical logs to ensure the targeted zone was recovered.</li> <li>• Cores were sampled at 0.3-m intervals and assayed by inductively coupled plasma (ICP) using the gravimetric methodology for major ions and insoluble material.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>• <i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</i></li> </ul>	<ul style="list-style-type: none"> <li>• Core was retrieved through the mineralised zones, with 4-inch cores retrieved in holes HP 16-16-29-21 and HP 13-16-29-22. Core sized at 2<math>\frac{3}{4}</math> inches was retrieved in HP 1-36-29-21.</li> <li>• All coring was completed through a specialised coring service.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The core is marked and measured by on-site geologists, recording the core recovery percent based off of the length of core drilled by the driller.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Logging</b>	<ul style="list-style-type: none"> <li>• <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• 100% of the core and reverse circulation (RC) samples were geologically logged.</li> <li>• No geotechnical logging has been performed as the project is in early exploration. Typically, specific GT holes are drilled at the advanced project stage.</li> <li>• The core was marked with 1-foot (ft) (0.3-m) drill depth intervals.</li> <li>• Vertical stripes were drawn along the axis of the core for orientation.</li> <li>• Each 1-ft (0.3-m) interval was photographed in front of a whiteboard depicting the core run number, the depth interval of the run, and the amount of core drilled and recovered.</li> <li>• A lithologic description of the core was recorded on a standardized structural logging form.</li> <li>• All relevant data for each core run were recorded; assay sample intervals were marked with unique sample tags in nominal 1-ft (0.3-m) intervals throughout zones of potash mineralisation, along with a buffer of approximately 5 ft (1.5 m) on the top and bottom of those zones.</li> <li>• After marking intervals for assay, the core was broken into 3-ft (0.9-m) sections and placed into wooden core boxes with hole specifics and depth intervals clearly marked on the box.</li> <li>• Only cored intervals were used for assay sampling. Samples may be depth corrected to geophysical logs.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The core is sawn in half (50%) with a diamond-blade rock saw in approximately 1-ft (0.3-m) assay intervals. Half the core is retained in core boxes. The logging procedure for potash is well established and documented.</li> <li>• Each prepared sample was placed into its own plastic polyline bag, sealed and marked with its respective sample number, separately bagged in a cloth geological sample bag with the unique sample tag placed inside the bag, and the sample number written on the bag before being securely tied shut.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Samples were loaded into 5-gallon (19-liter) buckets with tamper-proof lids, placed on a wooden pallet, and secured with industrial shrink wrap in the standard palletising fashion to be shipped to the Saskatchewan Research Council (SRC) in Saskatoon, Canada, for chemical analysis.</li> <li>Rock samples are jaw-crushed to 95% at –2 millimetres (mm) and 100- to 200-gram (gm) sub-sample split-outs using a riffler.</li> <li>SRC is a laboratory of international repute for the analysis of potash. SRC maintains its own quality control (QC) program.</li> <li>The sub-sample is then pulverized to 95% at –106 microns using a puck and ring grinding mill.</li> <li>The pulp is then transferred to a labelled plastic snap top vial.</li> <li>An aliquot of pulp is placed in a volumetric flask with DI (deionized) water; the volumetric flask is placed in a water bath. The sample is shaken and then vacuum filtered.</li> <li>The filters are dried in a low-temperature oven, then cooled in a desiccator and weighed.</li> <li>The soluble solution is then analysed by inductively coupled plasma optical emission spectroscopy (ICP-OES) and by ICP-MS (mass spectrometry) for chloride and bromine.</li> <li>An aliquot of pulp is placed in a test tube with DI water.</li> <li>The sample is shaken, centrifuged, and the excess water is decanted.</li> <li>A second wash of the sample material is performed.</li> <li>The remaining sample material (insoluble) is dried and weighed.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Duplicate and check samples were prepared for select intervals in each potash cycle.</li> <li>Blind duplicate samples were sent to SRC for analysis.</li> <li>SRC incorporated blank, repeat, and potash standard samples in the testing protocol.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li><i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>SRC maintains its own internal procedures and chain of custody to high industry standards.</li> <li>Analyses are by ICP-OES and by ICP-MS for chloride and bromine.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li><i>The use of twinned holes.</i></li> <li><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li><i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Check samples were sent to Activations Laboratories Ltd (Actlabs) in Ancaster, Ontario, and run with the same procedure as SRC and also showed good agreement.</li> <li>Most data is collected and received by the CPs and supporting staff. Chain of custody is maintained, the procedure is well documented, and quality assurance/quality control (QA/QC) analysis and comparison is carried out to ensure the data agreement. Data is stored on a server in designated project folders and backed up on a regular interval.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li><i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></li> <li><i>Specification of the grid system used.</i></li> <li><i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>All collar and pad locations were surveyed through Tri State Land Surveying and Consulting, a registered Land Surveyor with the State of Utah.</li> <li>All data is converted and standardized to Universal Transverse Mercator (UTM) North American Datum 1983 (NAD83) units.</li> <li>Topography is imported from ArcGIS' DEM Surfaces tool obtained through MapMart.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Qualified mineralisation contained in Potash 13 and 18 is classified as a JORC Mineral Resource based on 45 wells, 4 of which are assayed, and eelog data from 45 oil and gas wells. The radii of influence (ROI), typical of potash resource evaluation, are used. Only assayed holes were used to determine Measured or Indicated Resources; holes with grades estimates for eelogs were used for the Inferred Resource.</li> <li>Numerical estimates of potash mineralisation are based on computer modelling. Grade was composited into one bed.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> </ul>	<ul style="list-style-type: none"> <li>No bias is demonstrated based on the location of the drill holes with respect to current geologic knowledge of the area.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>The CP Vanessa Santos visited the property multiple times in 2011 and 2012 and oversaw the geologic operations before, during, and after drilling.</li> <li>A good well-site procedure for collecting data was documented and followed and chain of custody was maintained and supervised by AAI personnel.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No external audits or reviews of the resource estimate have been carried out to date.</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>Potash Minerals is focused on developing the Hatch Point Potash Project (HPPP) Property (the "Property") located in the potash-bearing Paradox Basin of San Juan County, Utah, United States of America (USA). Potash Minerals owns 90% of K2O Utah LLC (K<sub>2</sub>O Utah), it's potash joint venture partner that owns the HPPP mineral rights.</li> <li>The Property comprises 14 state potash leases totalling 3,595 ha and 22 federal potash prospecting permits totalling 17,833 ha. K2O Utah holds an additional 20,615 ha of federal lands under 27 potash PPAs contiguous with, or in close proximity, to the Property (Figure A-2). No resource is applied to the potash PPAs. A prospecting permit entitles the permit holder to apply with the BLM for a PRL if a valuable deposit can be demonstrated by exploration and the BLM determines that the lands are chiefly valuable for potassium.</li> <li>The state potash leases were issued on 1 March 2010 and have an expiration date of 28 February 2020. They are ML 51725 to ML 51738.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>The federal prospecting permits were issued to K<sub>2</sub>O Utah at UTU 086430, 08673, 086574, 08675, 086579, 086580, 086581 (partial), 086583 to UTU 086597 (15 parcels).</li> <li>The federal potash PPAs are UTU 086426, 086427, 086428, 086429, 086430, 086568, 086569, 086581, 086593, 086595, 086596, 086597, and 086598.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>This report carries forward and updates information reported in the JORC Exploration Target (AAI 2011). That Exploration Target included a conceptual estimate of tonnage and average grade for potash mineralisation contained in two beds ranging in depth from approximately 1,000 to 2,000 m. The basis for the Exploration Target range was a computerised geologic block model, developed from historical geophysical data from 38 oil and gas wells, publicly available through the State of Utah Department of Natural Resources, Oil, Gas, and Mining (UDOGM 2012) and published results of chemical analysis on potash core from one scientific drill hole.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>The depositional environment of the Paradox Basin is that of a restricted marine basin, influenced by eustasy, sea floor subsidence, and/or uplift and sediment input. The Basin has been variably described as a reflux (Hite 1970) and a drawdown basin. It is likely a combination of both. Reflux represents a basin isolated from open marine conditions by a shallow bar, thereby restricting inflow, increasing density, and increasing salinity. Drawdown is simple evaporation in an isolated basin resulting in brine concentration and precipitation. This is the classic “bull’s-eye” model (Garrett 1995).</li> <li>The formation of sylvite and carnallite are proposed as being primary and secondary. The precipitation of potash will be influenced by brine chemistry, i.e. availability of potassium, magnesium, sulphates and chlorides (Williams-Stroud 1994). It is thought that the mechanism of seawater evaporation is not enough to provide the concentration and suite of potash minerals found here, but the brine may be influenced by subsurface percolation of brines from the Mississippian carbonates and/or meteoric runoff (Stewart 1963).</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Drill hole information</b>	<ul style="list-style-type: none"> <li>• <i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>• This report is based on the interpretation of down hole elog data from the three exploration core holes drilled by Potash Minerals, one 1980s-vintage scientific core hole, and 41 oil and gas wells dispersed across the Property or within 18 km of its borders (refer to Table A-1).</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>• <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li>• <i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li>• <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Potash bed correlations were developed from a total of three exploration core holes drilled by Potash Minerals in 2011–2012, one 1980s-vintage scientific core hole, and 41 oil and gas wells with sufficient depth to reach the potash beds of interest.</li> <li>• Oil and gas records are submitted and stored with the UDOGM and are made available for public use after a period of 2 years. Those records include down hole geophysical and drilling records. Potash, as well as salt and clastics, can be defined through the use of the elog suites. Gamma ray logs in API units provide the principal information used in the location, identification, and evaluation of potash. Neutron, sonic and density logs, in various combinations, can augment the analysis.</li> <li>• In many cases, the wells have an incomplete suite of logs, making confirmation of grade and mineralogy difficult or impossible. In addition, some logs lack scale or a scale that can be used for proper evaluation.</li> <li>• The well records have been acquired in and around the subject Property and scanned to obtain a digital record. Of those 45, 10 are located on the Property and shown in bold (Table A-1). The majority of holes penetrated the potash beds of interest. The log suites vary by hole and typically include some combination of lithology, caliper, gamma ray, neutron density, neutron, resistivity, and sonic logs.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• An established methodology developed by Schlumberger calculates K<sub>2</sub>O% by combining gamma ray API units, corrected hole diameter (from caliper logs), and mud weight (Figure A-4). Used in combination with the other logs, mineralogy may be determined. Naturally occurring radioactivity in the form of the <sup>40</sup>K isotope derived from the potassium in the potash beds give a characteristic signature that is used to correlate the different cycles and estimate grade. The correlation between gamma ray response and potassium content was chiefly advanced by Schlumberger, beginning in the 1960s with the interpretation of elogs in the Prairie Evaporite Formation in Saskatchewan. E. R. Crain, a Schlumberger geophysicist, furthered this work and related log response to apparent K<sub>2</sub>O content, the customary unit of the potash industry. Experience has shown good agreement between the estimation when compared with assay An equivalent rather than an assayed grade is expressed as eK<sub>2</sub>O%.</li> <li>• Drilling, coring and assay must be used to test the interpretation. The elogs alone are not enough to establish an ore body. Drilling is widely spaced across the Paradox Basin and even though the geologic continuity of the depositional environment is well documented, post-depositional structural influences may alter, mobilise, concentrate or solution away the potash. Interpretations and drilling have shown spatial variability.</li> <li>• Top and bottom bed picks and bed composite K<sub>2</sub>O grades were estimated and compiled in a computer-based Microsoft Excel™ spreadsheet for resource modelling. Potash bed thicknesses and grades were spatially modelled across the Property using Carlson Mining 2013 Software™ Geology Module (Carlson 2013), an industry-recognized commercial-grade geologic and mine modelling software system that runs within AutoDesk Inc.'s AutoCAD 2013©.</li> <li>• For an Inferred Resource, mineralisation must be located within 2,400 m of a petroleum well with a bed thickness equal to or greater than 2.0 m and a composite grade equal to or greater than 10.0% K<sub>2</sub>O defined by core assays.</li> <li>• For an Indicated Resource, mineralisation must be located between 1,200 m and 2,400 m of an exploration core hole with a bed thickness equal to or greater than 2.0 m and a composite grade equal to or greater than 10.0% K<sub>2</sub>O defined by core assays.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>For a Measured Resource, mineralisation must be located within 400 m of an exploration core hole with a bed thickness equal to or greater than 2.0 m and a composite grade equal to or greater than 10.0% K<sub>2</sub>O defined by core assays.</li> <li>For the core holes, bed thickness, K<sub>2</sub>O composite grade, and mineralogy were determined from assays on core. For the oil and gas wells, no core was drilled and no assays exist, and bed thickness, eK<sub>2</sub>O%, and mineralogy were estimated from the available elogs.</li> <li>In-place sylvinitic tonnages were calculated using an <i>in situ</i> bulk density of 2.08 tonnes per cubic metre (t/m<sup>3</sup>) typical for sylvinitic mineralisation. Carnallite (carnallite) tonnages were derived from an <i>in situ</i> bulk density calculated as a function of the local carnallite fraction, based on a mechanical, dual-mineral mixture of carnallite (1.61 t/m<sup>3</sup>) and halite (2.17 t/m<sup>3</sup>).</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Holes are approximately vertical and the beds are assumed to be approximately horizontal based on widespread correlation of the salt cycles from oil and gas records. This portion of the Paradox Basin is relatively undisturbed, although Cycle 18 is repeated and folded. The mechanism for folding is believed to be from the basement, resulting in distortion, but not displacement, of the lower salt beds (TeSelle 2012).</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to Figures A-1 and A-3.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to Table A-3 for complete listing of potash intercepts in all holes. Intercepts represent continuous mineralization over a single interval (i.e., potash bed) for which true thickness and composite grade are stated.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><b>Other substantive exploration data</b></p>	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>In 2011, ten brokered two-dimensional (2D) seismic lines of 1968–1983 vintage were obtained in proximity to, what were at that time, proposed exploration holes on the Property. The lines were reprocessed by RPS Boyd PetroSeach (RPS) which interpreted surfaces in Clastic 13 (“C13” in the report), Potash 18 (“P18” in the report), and the top of the Mississippian Limestone Formation (the “Mississippian”). C13 is alternately identified as “Clastic 13” and “Carnallite 13” in the RPS reports. Synthetic seismographs were generated from nearby drill holes (Husky Fed 6-15, Hatch Point 1, and Threemile 43-18H) to index those surfaces for correlation. Time structure and isochron maps were constructed for C13, P18, and the top of the Mississippian. Threemile 43-18H was not drilled deep enough to calibrate the base of the salt/top of the Mississippian. P18 had very weak seismic reflectivity and is therefore poorly mapped. The CPs relied upon the conclusions drawn by RPS (2011a, 2011b, and 2011c).</li> <li>Comparison of assay, handheld X-ray fluorescence (XRF), estimated, and spectral corrected K<sub>2</sub>O values from SRC were compared to composited handheld XRF values, K<sub>2</sub>O estimated from gamma ray (eK<sub>2</sub>O), and corrected spectral gamma ray (K<sub>2</sub>Oc). This comparison demonstrates the relative reliability of K<sub>2</sub>O estimated from the elogs and XRF point measurements.</li> <li>In general, the XRF measurements trend slightly lower than the assay values. Potash 13 showed better agreement than Potash 18, which is likely a result of smaller crystal sizes in Potash 13. In the case of the more coarsely crystalline Potash18, the window on the analyser is more likely to read a single, large crystal rather than multiple crystals in a field. This introduces greater variability and can skew grade in some circumstances. The statistical effects of crystal variability can be offset by increasing the number of sampling points.</li> </ul>
<p><b>Further work</b></p>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Infill and step-out drilling is warranted for Mineral Resource definition.</li> <li>Potash Minerals is positioned to file for and obtain PRLs where can st chiefly valuable deposit determination by the BLM can be supported.</li> <li>Lower priority drilling targets exist to the north, southwest, and southeast where the resource remains largely open.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• Three-dimensional (3D) seismic surveying is recommended where favorable potash is discovered for improving structural interpretations, increasing confidence in bed continuity, and supporting solution mine design at a later stage. Dipole sonic logs should be run for a velocity seismic profile (VSP) in all exploration holes for the purpose of generating synthetic seismograms to improve the analysis of existing 2D or future 2D or 3D seismic measurements.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in Section 1, and where relevant in Section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>• <i>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</i></li> <li>• <i>Data validation procedures used.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The well records obtained are of varying vintages, and scanning for digital output could compound error in the records. Well records are available as Tagged Image File Format (TIFF) files and in many cases originate from photocopied records from as far back as the 1950s. The company that scans the records and outputs a digital file has proprietary software that can correct and rectify old images. Scanned records were checked against the originals.</li> <li>• Duplicate and check samples were prepared for select intervals in each potash cycle. Duplicate cores were quartered and sent to SRC for analysis. SRC incorporated blank, repeat, and potash standard samples in the testing protocol. Check samples were sent to a second qualified laboratory to verify results. SRC maintains its own internal procedure and chain of custody to high industry standards. There was good agreement in the duplicates.</li> <li>• SRC is a laboratory of international repute for the analysis of potash. SRC maintains its own QC program. QC measures, and data verification procedures applied, include the preparation and analysis of standards, duplicates, and blanks.</li> <li>• Check samples were sent to Actlabs in Ancaster, Ontario, and run with the same procedure as SRC and also showed good agreement. Actlabs is also accredited.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Site visits</b>	<ul style="list-style-type: none"> <li>• <i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li>• <i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The CP's Vanessa Santos and Leo Gilbride visited the Property multiple times in 2011 and 2012 and oversaw the geologic operations before, during, and after drilling.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>• <i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i></li> <li>• <i>Nature of the data used and of any assumptions made.</i></li> <li>• <i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i></li> <li>• <i>The use of geology in guiding and controlling Mineral Resource estimation.</i></li> <li>• <i>The factors affecting continuity both of grade and geology.</i></li> </ul>	<ul style="list-style-type: none"> <li>• In potash exploration, ROI has been used in the estimation of resource. ROI varies by basin and reflects the geologic variability of the mineralisation with respect to grade, thickness, and continuity. Drill hole density in a large basin for interpretation is not optimum, although correlation of the salt and potash cycles is possible over most of the basin. Structural features determined from literature and seismic survey may not be detailed enough to understand post-depositional influences on potash.</li> <li>• In the simplest and most direct methodology, exploration would try to identify areas of likely sylvinite formation in the Paradox Basin where the salts were the thickest, magnesium is depleted, calcium is enriched, and cycles appear complete in areas of the Basin where reflux and drawdown are maximized. This methodology excludes the post-depositional action of the salts, which can be incredibly mobile and are further influenced by later structure and sediment loading, the latter attributed to the Cutler Formation (Trudgill and Arbuckle 2009).</li> <li>• On the Property, drilling results and interpretation of existing oil and gas records have shown that while Cycle 13 is almost exclusively made up of sylvinite. In some cases, the sylvinite appears to be just below Clastic 4 with no intermediate salt bed, which is a little unusual and suggests a rapid sediment influx that terminated potash precipitation rather than a more gradual transgressive event to a more open marine environment.</li> <li>• Cycle 18 seems to be marked by a boundary of sylvinite mineralisation transitioning to mixed sylvinite and carnallite, and then carnallite. It is suggested here that, along the axis of that basin depocenter, primary carnallite exists and is rimmed by a zone of mineralisation changing to sylvinite. This portion of the Paradox Basin is relatively undisturbed although Cycle 18 is repeated and folded. The mechanism for folding is believed to be from the basement, resulting in distortion, but not displacement, of the lower salt beds (TeSelle 2012).</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Dimensions</b>	<ul style="list-style-type: none"> <li><i>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</i></li> </ul>	<ul style="list-style-type: none"> <li>Potash mineralisation occurs in Potash 13 and Potash 18, while minor amounts of potash also occur in Potash 5, 6, 9, 16, 19, and 21.</li> <li>Within the Property, Potash 18 occurs in an upper and lower split referred to as Potash 18 Upper and Potash 18 Lower. Potash 13 is considered a secondary bed of interest for solution mining. Potash 13 also occurs in an upper and lower split referred to as Potash 13 Upper and Potash 13 Lower.</li> <li>The mineralisation ranges between 1,000 m and 2,100 m deep.</li> <li>Modelled bed isopach maps for Potash 13 Upper, 13 Lower, 18 Upper, and 18 Lower are presented in Figures A-5 through A-8, respectively. Composite K<sub>2</sub>O grade maps are presented in Figures A-9 through A-12 for the corresponding beds.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li><i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i></li> <li><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li><i>The assumptions made regarding recovery of by-products.</i></li> <li><i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> <li><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li><i>Any assumptions behind modelling of selective mining units.</i></li> <li><i>Any assumptions about correlation between variables.</i></li> <li><i>Description of how the geological interpretation was used to control the resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>Potash bed thicknesses and grades were spatially modelled across the Property using the Carlson Mining 2013 Software™ Geology Module (Carlson 2013).</li> <li>For the core holes, bed thickness, K<sub>2</sub>O composite grade, and mineralogy were determined from assays on core.</li> <li>For the oil and gas wells, no core was drilled and no assays exist, and bed thickness, eK<sub>2</sub>O, and mineralogy were estimated from the available logs.</li> <li>The potash beds of interest were gridded into single layers of 100-m-square blocks of variable vertical thickness representing the local thickness of the respective potash bed.</li> <li>Block thickness and K<sub>2</sub>O grade values were estimated from neighbouring holes (point data) using an inverse distance cubed (ID3) modelling algorithm.</li> <li>The maximum number of data points used for estimation of any grid point was limited to the closest ten holes within an ROI of 16,090 m.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>• Discussion of basis for using or not using grade cutting or capping.</li> <li>• The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	
<b>Moisture</b>	<ul style="list-style-type: none"> <li>• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>• In-place sylvinitic tonnages were calculated using an <i>in situ</i> bulk density of 2.08 t/m<sup>3</sup>, which is typical for sylvinitic mineralisation. This is a dry tonnage.</li> <li>• Carnallite tonnages were derived from an <i>in situ</i> bulk density calculated as a function of the local carnallite fraction, based on a mechanical, dual-mineral mixture of carnallite (1.61 t/m<sup>3</sup>) and halite (2.17 t/m<sup>3</sup>).</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>• The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>• The cut-off parameters were a bed thickness equal to or greater than 2.0 m and a composite grade equal to or greater than 10.0% K<sub>2</sub>O defined by core assays.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>• The Property has reasonable prospects for eventual economic extraction by solution mining where favourable geologic conditions exist.</li> <li>• The potash mineralisation, which ranges between 1,000 m and 2,100 m deep over the Property, is considered too deep to be economically attractive for conventional underground mining, while potash is being solution mined at similar depths at contemporary solution mining operations.</li> <li>• The current Mineral Resource does not include any dilution or ore loss.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>• The scoping studies completed to date justify reasonable prospects for economic extraction of sylvinitic and carnallite mineralisation in Potash 18 and sylvinitic mineralisation in Potash 13.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Existing wells on the Property produce a limited supply of potable water for domestic and agricultural use.</li> <li>Deeper wells are demonstrated sources of brine.</li> <li>Surface water is also available for use by the Project.</li> <li>Development of surface evaporation ponds along with required infrastructure would be necessary to support solution mining.</li> <li>Establishment of land rights and environmental impact assessments would be required.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>In-place sylvinitic tonnages were calculated using an <i>in situ</i> bulk density of 2.08 t/m<sup>3</sup>, which is typical for sylvinitic mineralisation. This is a dry tonnage.</li> <li>Carnallite tonnages were derived from an <i>in situ</i> bulk density calculated as a function of the local carnallite fraction, based on a mechanical, dual-mineral mixture of carnallite (1.61 t/m<sup>3</sup>) and halite (2.17 t/m<sup>3</sup>).</li> <li>Bulk density was determined through comparing assay data to the elog density values for the corresponding mineralogy.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul style="list-style-type: none"> <li>For this report and in accordance with the JORC Code, 2012 Edition (JORC 2012), the definitions of "Mineral Resource" and "Ore Reserve" apply as published in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves prepared by the Joint Ore Reserves Committee of The Australian Institute of Mining and Metallurgy (AusIMM), Australian Institute of Geoscientists and Minerals Council of Australia, effective 20 December 2012.</li> <li>ROI have been used in the estimation of resource in Potash exploration. ROI vary by basin and reflect the geologic variability of the mineralisation with respect to grade, thickness, and continuity. Mineral Resource defined exclusively by elogs from petroleum wells is limited to the Inferred classification because elogs are an indirect potash sampling method and generally afford a lower level of accuracy and precision than assays on core.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>The very best wells with modern elog suites, including spectral gamma logs, have been found to be more reliable than older elogs for potash estimation and can approach the level of accuracy achieved with core assays.</li> <li>To ensure confidence and minimize uncertainty, the Measured and Indicated classifications are presently limited to mineralisation defined by assayed core holes.</li> <li>Mineral Resource classification areas are shown in Figures A-13 through A-16 for the respective beds.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>AAI collected and generated the data used in the Resource estimates which underwent QA procedures to establish veracity.</li> </ul>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></li> <li><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>Principal factors affecting local estimation accuracy include potash continuity, grade/bed thickness/mineralogical variability, the presence of geologic anomalies rendering resource recovery unfeasible, and chemical and elog grade measurement precision.</li> <li>Omni-directional semivariogram models were developed and kriging models tested against the ID3 model used for the resource estimate.</li> <li>Reliable definition of semivariogram models for thickness and grade was limited by the wide spacing of drill holes.</li> <li>Kriging results compared within 5% or better with the ID3 model.</li> <li>Other modelling methods (triangulation, polygonal) compared within 5% or better with the ID3 model, suggesting limited error introduced by the modelling method.</li> <li>Resource areas defined exclusively by elogs and/or areas more than 1,200 m from a measurement point convey the highest level of geologic uncertainty and were accordingly classified as Inferred, suggesting that actual mineralisation could be substantially better or worse than estimated over the potentially mineralised area. Favourable mineralisation is implied, but not verified in the Inferred area.</li> <li>Measured and Indicated Resources were limited to areas within 400 m and 1,200 m, respectively, of an assayed core hole. Potash variability and the occurrence of geologic anomalies within these</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>limits are still possible; however, geologic continuity is assumed with confidence over these distances and only under occasional circumstances is continuity expected to be interrupted.</p> <ul style="list-style-type: none"> <li>• The most substantial risk is that localised areas with marginal resource (i.e., incrementally above cut-off) prove to be submarginal within the estimation error tolerance. This risk can be partly offset by resource areas that prove to be thicker and/or higher grade than estimated. The Inferred Resource includes the highest proportion of marginal resource.</li> <li>• The global Mineral Resource estimate includes a 15% tonnage reduction factor to account for potential geologic anomalies.</li> </ul>

#### Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in Section 1, and where relevant in Sections 2 and 3, also apply to this section.)

Section 4 does not pertain to this Mineral Resource report.