

**MINERAL REPORT**

RECREATION AND PUBLIC PURPOSES ACT  
SALE OF PARCEL  
PUEBLO FIRE STATION  
HUMBOLDT COUNTY, NEVADA

Mineral Potential Evaluation

LANDS INVOLVED

Mount Diablo Meridian, Nevada

5.0 Acres Parcel within the  
NW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> of Section 10, T. 43 N., R. 31 E.

**Prepared By:**

/s/ Tim Jefferson 7/20/2020

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**Technical Approval:**

/s/ Ken Loda 20 July 2020

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## **SECTION 1.0 – EXECUTIVE SUMMARY FOR MANAGERS**

This Mineral Potential Report assesses the potential for mineral development on federal lands associated with the disposal of public land under the Recreation and Public Purpose (R&PP) Act of 1954, as further amended under the Federal Land Policy and Management Act of 1976, Section 212. Department of the Interior regulations for the R&PP Act are found in Title 43 of the Code of Federal Regulations (43 CFR), Parts 2740 (Sales) and 2912 (Leases).

Humboldt County has submitted an R&PP application (case file number NVN-097660) for land currently administered by the Bureau of Land Management (BLM) for the purpose of constructing a new fire house facility for the Pueblo Fire Protection District. Under this application, the BLM could dispose of the surface and mineral ownership of 5.0 acres within the evaluated 10-acre parcel described in this report.

The surface and mineral estates of the subject lands are owned by the United States. The location of the proposed R&PP is unencumbered by mining claims, mineral leases, mineral material sites, or material site rights-of-way (ROW).

### **1.1. RECOMMENDATIONS**

From the review of this mineral potential report and the field reconnaissance performed on the subject land, with regard to mineral resources it is recommended that the subject lands be classified for disposal under the Recreation and Public Purpose Act.

## **SECTION 2.0 – INTRODUCTION**

### **2.1. PURPOSE AND SCOPE**

This report assesses the potential for mineral development on federal lands associated with the disposal of public land under the Recreation and Public Purposes Act of 1954, as further amended under the Federal Land Policy and Management Act of 1976, Section 212. Humboldt County has submitted an R&PP application (case file number NVN-097660) for land currently administered by the Bureau of Land Management (BLM) for the purpose of constructing a new volunteer fire house (Pueblo Fire District Fire House) and storage building for other Humboldt County road maintenance heavy equipment. Under this application, the BLM could dispose of the surface ownership of 5.0 acres of land located to Humboldt County, Nevada.

This mineral potential report conforms to BLM Manual 3060 and includes information for the proposed R&PP application area. This report will present an opinion on the mineral potential for locatable, salable, and leasable minerals, and it will identify the existence of mining claims, mineral leases, or mineral material rights-of-way and permits. The conclusions of the report are limited to classifying the lands for disposal under the R&PP Act and should not be used for any other purpose.

The lands applied for under R&PP are located approximately 65 miles northwest of Winnemucca within Humboldt County as shown on Figure 1. This area of Humboldt County consists of intermingled private and public land that is generally characterized as rural agriculture.

The parcel is located in a valley within the Basin and Range Physiographic Province. As is typical of these valley bottoms, topographic relief for the subject parcel is less than 10 feet. The vegetation is primarily mixed sagebrush, shadscale, and cheatgrass. Other shrubs, grasses, and forbs are a minor component of the vegetative community.

The author visited the parcel on February 12, 2020, and on May 12, 2020. Photos taken during the site visits are included as Figure 2. Since the parcel has not yet been platted at the date of this writing but will be contained within the NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> of section 10, the full 10-acre aliquot part has been evaluated.

## **2.2. LANDS INVOLVED**

The subject R&PP application describes a 5.0 acre parcel which lies within lands described as T43N, R31E., Sec 10: NW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub>, Mount Diablo Base & Meridian.

The subject property (Figures 3 and 4) examined in this report is accessed by traveling north from Winnemucca on US 95 to the junction with SR 140, then west to mile post 40.8. From this point turn west on Big Creek Road (known also as Dufurrena Road, county road 210) for 2.6 miles. The proposed Pueblo Fire Station will be located on the south side of Big Creek Road. Private agricultural land is situated adjacent to and on the north side of Big Creek Road.

## **2.3. STATUS RECORD DATA**

The Master Title Plat for the subject land, which provides information regarding land status and existing rights-of-way, is shown in Figure 5. The lands were identified in the field by cultural and topographic features shown on the USGS 7.5' quadrangles Quinn River Crossing and Dyke Canyon, aerial photographs, and using a hand-held GPS unit. The survey monument (brass cap) was located for the section corner common to T43N, R31E, sections 3, 4, 9, and 10 (the northwest corner of the 10 acre parcel evaluated). The cap is approximately 20 feet west and 2 feet north of the intersection of prominent north-south and east-west fences along the north side of Big Creek Road. The north-south fence terminates at the east-west fence. Additionally, the survey monuments were found for the common corner of sections 2, 3, 10, and 11 and the <sup>1</sup>/<sub>4</sub>-corners between sections 4, 5, 8, and 9, T43N, R31E.

### **2.3.1 Disposition of Mineral Rights**

The subject lands are currently federal surface and federal minerals and are currently open for mineral entry, including location under the General Mining Law of 1872.

### **2.3.2 Mining Claims**

There are no mining claims on the subject parcel, as of July 7, 2020, as verified by the BLM database LR2000 and Humboldt County Nevada Recorder digital research room web site (<http://recorder.hcnv.us/>). No claim posts or mining related disturbances were observed on the subject parcels.

### **2.3.3 Mineral Leases**

There are no mineral leases in effect on the subject parcel, as of July 7, 2020, as verified by the BLM database LR2000 and MTP T43N, R31E N-20.

### **2.3.4 Oil and Gas**

There are no oil and gas leases in effect on the subject parcel, as of July 7, 2020, as verified by the BLM database LR2000 and MTP T43N, R31E N-20.

### **2.3.5 Geothermal**

There have been no geothermal leases, current or historically, in effect on the subject parcel, as of July 7, 2020, as verified by the BLM database LR2000 and MTP T43N, R31E N-20.

### **2.3.6 Material Sale Sites**

There are no mineral material sites in effect on the subject parcel, as of July 7, 2020, as verified by the BLM database LR2000 and MTP T43N, R31E N-20. No surface disturbance related to exploration or development of mineral materials was found during examination.

### **2.3.7 Prospectively Valuable Classification**

The subject parcel is located in an area that is prospectively valuable for geothermal resources but is not known to be valuable for other leasable minerals. The basinal features related to faulting, lithology of surrounding formations (e.g., Tertiary-aged volcanics), and the presence of local hot springs attest to active geothermal systems being present. The Dyke Hot Spring (142° F at source) lies in section 25, T43N, R30E approximately 5 miles to the southwest of the parcel, and Howard Hot Spring (129° F at source) and several unnamed hot springs lie approximately 6.8 miles north-northeast of the subject parcel in section 4, T44N, R31E (Klein and Koenig, 1977). However, the temperatures found are characterized by nearly “normal” geothermal gradients rather than the abnormally high rates needed for development of geothermal energy. It has been determined that surface entry on the subject parcel would not unreasonably interfere with operations under the mineral leasing laws. The subject parcel is classified as not being prospectively valuable for oil and gas, and have low potential for other leasable minerals

(BLM, 2006, Godwin *et. al.*, 1983; Gere *et. al.*, 1980; Godwin and Docktor, 1981; Miller *et. al.*, 1980; Smith and Gere, 1983; Wayland *et. al.*, 1980; Hoops, 1990).

### **2.3.8 Other Valid Existing Rights**

There are no other known valid existing rights related to mineral development.

### **2.3.9 Area of Significant Scientific Interest**

There are no known areas of significant scientific interest related to geology on the subject lands.

## **SECTION 3.0 – GENERAL GEOLOGY AND MINERAL HISTORY**

### **3.1. PHYSIOGRAPHY**

The subject sections are located within the Basin and Range Physiographic Province, a region characterized by a series of generally north-trending mountain ranges separated by alluvial valleys. The north-south trending mountain ranges are typically 5-15 miles wide separated by low intervening valleys or basins that range from 10- 20 miles wide (Price, 2002, Stewart, 1980). These features were created by extensional tectonism and block faulting that resulted in horst and graben structures that began in the middle Tertiary and has continued into the present. Valley bottoms range from about 3,450 to 4,500 feet in elevation and mountain ranges have elevations from 5,000 to over 9,500 feet above mean sea level. Relief of 3,500 to 4,000 feet within a distance of a few miles is common. The subject property lies near the center of a north-south oriented valley, which is the extreme northern end of the east arm of the Black Rock Desert. The principle mountain ranges bounding the subject property on the east is Bilk Creek Range (King River Range of Willden, 1964), and on the west is the Pine Forest Range. A set of hills of moderate relief lie approximately 20 miles to the north of the subject property, and form the northern boundary of the east arm. Another set of hills of moderate relief, the northern end of the Jackson Mountains, lie approximately nine miles to the southeast.

The mountains and hills are typically drained by short perennial, intermittent, and ephemeral streams that disappear into the broad alluvial fans at the foot of the mountain ranges. Rivers or ephemeral streams are generally present in the center of the valleys or basins. These rivers and streams may be connected but all basins eventually are closed basins, meaning that the streams and rivers end in the basin, generally by creating a playa, rather than flowing to the sea. The subject parcel is in the drainage of Deep Creek, a tributary to the Quinn River. The Quinn River flows westward from the Quinn River Valley and passes approximately five miles southeast of the subject property. At that point it takes a turn southward and terminates in a sink in the Black Rock Desert Playa.

The climate of the Basin and Range Province is arid with annual rainfall of about 4 inches in the valleys and as much as 20 inches or more in the mountains (Johnson, 1977). Valley bottoms are hot and dry in the summer months while cooler temperatures are found at higher elevations. Most

of the land is desert shrub land, although sufficient water is available to allow livestock to be grazed and agricultural activities, typically to support livestock. Several irrigation wells are present north of the subject parcel.

### **3.2. REGIONAL GEOLOGY**

The geologic history of Northern Nevada is marked by a complex record of Paleozoic and Mesozoic accretionary and sedimentary events followed by periods of intrusive and extrusive volcanism and additional sedimentation. During the Cenozoic and Tertiary eras, crustal extension created the horst and graben features of the Basin and Range Province contemporaneous with additional volcanism (Price, 2002, Stewart, 1980, Stewart and Carlson, 1978).

The earliest rocks date to the Precambrian to early Paleozoic era when Nevada was covered by a shallow sea. During this period, approximately 40,000 feet of marine sediments ranging from near shore (eastward direction) to deep ocean (westward direction) along with basic volcanics were deposited in an accretionary offshore basin extending north to south along western North America.

These early sedimentary and volcanic rocks were folded and faulted in the Late Devonian and Early Mississippian-aged Antler orogeny which thrust distal offshore marine sediments and volcanic rocks (the eugeosynclinal (deep water) portion of the Cordilleran Geosyncline) eastward over more marginal marine clastic. Deposition of marine sediments and volcanism continued after this event until the Mid to Late Permian to Early Triassic-aged Sonoma orogeny. The Sonoma orogeny was also a thrust event that placed distal offshore marine sediments and volcanics eastward over more marginal marine clastic rocks. After the orogeny, the area was downwarped with sedimentary deposition during the Triassic and early Jurassic era consisting dominantly of fine-grained sediments representing distal delta deposits derived from the continent, and carbonates as opposed to deeper marine sediments. The Jurassic Nevada/Sevier orogeny regionally metamorphosed, folded, and faulted these sediments. Associated volcanism during this orogeny was predominantly mafic culminating in emplacement of plutonic granitic rocks in Cretaceous time (Silberling and Roberts, 1962).

During the late Cretaceous, the area was uplifted and subjected to erosion and continental deposition. Following deposition, rifting (extensional faulting) began along the Orovida Rift which sporadically emplaced volcanic and plutonic rocks ranging from rhyolitic tuffs to basalts. Creation of the Basin and Range Province began shortly after this time. Normal faulting resulted from the extensional regime, and is typified by horst and graben topography. The north-south mountain ranges (horst blocks) are separated by broad sediment filled down dropped (graben) valleys.

During Quaternary time, on-going Basin and Range tectonism has persisted and valleys continue to fill with sediments shed from surrounding mountain ranges and minor volcanic and ash flows. Rocks affected by early Tertiary tectonic activity continue to be deformed with ongoing seismic activity. Alluvial fans consist of gravel and cobbles near the highlands and grade downward into sand, silt, and clay in the valley bottoms.

Many of the basins periodically contained lakes or were branches of the large Pleistocene-aged

glacial Lake Lahontan. At its highest stand of 4660 feet above mean sea level (amsl)(Reheis, 1996), Lake Lahontan covered 12,058 square miles of surface and was over 1000 feet deep in its deepest portion, currently occupied by present day Pyramid Lake. The lake occupied numerous valleys extending from the Oregon border southward to Hawthorn, Nevada and from east of Battle Mountain, Nevada westward to near Susanville, California. Lake Lahontan had several high-water stages separated by periods when evaporation of the closed lake caused playas to form. Present day lakes and playas currently occupying historic branches of Lake Lahontan include Pyramid Lake, Walker Lake, Honey Lake, Winnemucca Dry Lake, Humboldt Lake, Humboldt Sink, Carson Sink, Desert Valley playa, and the Black Rock Desert playa. The high stand of Lake Lahontan extended up the Humboldt River Valley to the area of Argenta, Nevada, approximately 12 miles east of Battle Mountain.

### **3.3. SITE GEOLOGY**

A regional geologic map surrounding the subject property is displayed in Figure 6. The rock types and structure, and known mineral deposits are described below. The subject property was visited and examined by the author on February 12, 2020, and May 12, 2020.

Of highest relevance to the determination of potential mineral economic value, the subject property is underlain by a thick layer of unconsolidated alluvium, consisting of clays, silts, sands, and gravels of fluvial, aeolian, lacustrine (Lake Lahontan) and alluvial origin. The subject property sits at an elevation of 4,135 feet which is approximately 500 feet below the high water stand of glacial Lake Lahontan (4,660 feet) and sits just north of the mapped estimated boundary separating playa, marsh and alluvial-flat (eroded) deposits and alluvial deposits (respectively Qp and Qa units of Stewart and Carlson, 1978).

There are several irrigation wells lying within a few miles to the north of the property. The deepest nearby well for which lithologic records are available (Well Log ID 19673 State of Nevada, Division of Water Resources online Well Log Search) lies in the NE1/4 NE1/4 of Section 3 T43N, R31E approximately 6,850 feet to the northeast. This well passes through loamy topsoil (0-22 ft) sandy clay (22- 63 ft), sand and gravel (63-69 ft), and sandy brown clays (69-418 ft) and bottoms in clay with streaks of sandstone (418 to total depth of 900 ft). Static water level is 58 feet and the water is cool.

As displayed in the digital raster set of the Depth to pre-Cenozoic bedrock in northern Nevada (Ponce, 2017), the expected depth to bedrock below the subject property is expected to be between 1650 feet (0.5 Km) and 4925 ft (1.5 Km).

The closest outcrops of consolidated bedrock to the subject property, silicic welded and non-welded tuffs of Tertiary age (Tu of Willden, 1964 and Tt3 of Stewart and Carlson, 1978) occur in low lying hills approximately 3.5 miles east and 4 miles northeast of the subject property.

The geology of the Bilk Creek Range to the east is composed of rhyodacitic and basaltic to andesitic rocks of Tertiary age. The Bilk Creek Range is also referred to as the Kings River Range by Willden (1964). The Pine Forest Range to the west is composed of a meta-sedimentary package of phyllites, slate, and fine-grained quartzite and a marbleized limestone of Jurassic, Triassic and



Permian age, as well as Permian aged volcanic rocks of the Happy Creek Series. Intruding, assimilating these units, are Cretaceous to early Tertiary granodiorites (Figure 6). Elevation of Sentinel Peak in the southwest Pine Forest mountains is 6900 feet above mean sea level (amsl), and the elevation of Duffer Peak, located in the central portion of the Pine Forest Range is 9458 feet amsl. The elevation of Agate Point, located near the center of the Bilk Creek Mountains is 6768 feet amsl.

Elevations on-site range from 4130 feet above mean sea level (amsl) from the southern boundary to 4140 feet amsl along the northern boundary of the subject property. The terrain is generally flat with relief generally less than 10 feet due to natural drainages. Vegetation in the surrounding area is primarily composed of cheatgrass with minor patches of sagebrush

## **SECTION 4.0 – KNOWN MINERAL DEPOSITS**

The Dyke Mining District, also in part previously known as the Florence Mining District, is sometimes included with the Leonard Creek District (Willden, 1964). The Dyke Mining District is located in the Pine Forest Range, west of the subject property. There are many historic and current lode mining claims and evidence of past mining and exploration in an area approximately 5-9 miles southwest of the subject property. These claims occupy an area that includes Buckaroo Canyon southeastward to, and including Dyke Hot Springs in sections 11-14, 25-26, 35-36 T43N, R30 E, sections 1-2, T42N, R30E, Section 31, T43N, R31E, and section 6 T42N, R31E (Figure 6). Historic reports and site visits (Hanselman, 1935, and Quade, 1984) describe gold, silver, copper and lead mineralization associated with hematitic and limonitic quartz-(kaolinite)-pyrite veins and breccias associated with fault structures.

The author visited several mine tunnel portals and prospects within Dyke Canyon (sections 25 and 26, T43N, R30E) on February 12, 2020, as well, and noted the character of the mineralization appears to be mesothermal veins likely associated with Cretaceous age pluton emplacement. Based on examination of mine dump material by the author, the miners extracted pods of gossanous ore (oxidized presumably auriferous sulfides and free gold) associated with quartz-adularia veins and breccias. Host rocks include contact metamorphosed sediments, metavolcanics and granitic dikes. Within a 10-mile radius of the subject property, scattered prospects and mines with limited production of similar character as described by Quade (1984) can be found in sections 5 and 34, T44N, R30E. The Dyke Mining District contains gold, silver and antimony as its primary resources (Willden, 1964). Total recorded production from the Pine Forest Range, including all mining districts, is approximately 1,100 ounces gold, 1,300 ounces silver, 7,700 pounds of copper, and 900 pounds of lead with the majority of the production credited to the Ashdown Mine located approximately 20 miles northwest of the subject parcel (Willden, 1964). The Ashdown mine (re-opened in recent years but currently inactive) has also recovered molybdenum from quartz veins.

Based on the estimated depth to pre-Cenozoic bedrock under the subject parcel, exploration for and development of potential gold bearing veins similar to those present in the nearby Pine Forest Range would be very difficult and costly to target and is thus highly unlikely. Additionally, the veins of this character, if present below the subject parcel would likely be unoxidized. The local presence of Mesozoic aged calcareous and Tertiary aged volcanic lithologies, and the presence of local hot springs is permissive to the possibility of the existence of epithermal gold-silver deposits

within the vicinity, but the depth to pre-Cenozoic bedrock, lack of other local geological indicators, and lack of recent exploration for these genetic deposit types makes the exploration for and discovery of such mineralization beneath the subject property remote.

## **SECTION 5.0 – MINERAL POTENTIAL CLASSIFICATION**

The disposal of this parcel, with the reservation of the geothermal, oil, and gas, and sodium and potassium resources, should not interfere with the future development of any mineral resources.

### **5.1. COAL**

There are no known deposits of coal in the vicinity of the subject property. Coal bearing units were not observed to exist in the immediate vicinity. The land has no potential for coal resources based on observations during the site visit, the known geologic environment, and NBMG Bulletin 59, Geology and Minerals Deposits of Humboldt County, Nevada (Willden, 1964).

### **5.2. OIL AND GAS**

The Western Great Basin Oil and Gas Province is thought to be prospective for hydrocarbons because source rocks (black shales or coal-rich materials) and traps are known to occur. U.S. Geological Survey National Oil and Gas Resource Assessment Team. 1995a. The subject property is located within and near the northern border of a delineated area that encompasses the Black Rock Desert to the southwest that are part of the Eastern Oregon Neogene Basins Play, and Cretaceous Source Rock – Northwestern Nevada Play, and the Neogene Source Rocks – Northwestern Nevada Play. The source rocks for the Eastern Oregon Neogene Basins Play include Neogene coals and carbonaceous lacustrine rocks including organic rich shale. The source rocks for the Northwestern Nevada Play are inferred rock that is mature and locally over-mature in areas of thermal process including geothermal activity and high heat flow. Reservoir rocks include lacustrine sediments interbedded with or laterally adjacent to alluvial fans or sandstones deposited and/or fractured Tertiary volcanic rocks. The USGS has estimated the probability of an economic petroleum reservoir potential as 0.05, and 0.08, respectively for each play (USGS, 1995, and USGS, 1995a).

In general, the subject lands have low potential for any hydrocarbon production. There are no oil and gas leases currently in the area of the subject property. Should oil and gas exploration occur in the future, the small footprint of the Pueblo Fire Station property should not be an impediment to exploration or development.

### **5.3. GEOTHERMAL**

There are no Known Geothermal Resource Areas (KGRAs) within 75 miles of the subject property. However the property is situated within an area delineated as Prospectively valuable (Hoops, 1991, and the Geothermal Resources Listing Programmatic EA, BLM, 2005). There are known hot springs within five miles of the subject property. The Dyke Hot Spring (142° F at source) lies in section 25 T43N R30E approximately 5 miles to the southwest of the parcel, and Howard Hot Spring (129° F at source) and several unnamed hot springs lie approximately 6.8 miles north-northeast of the subject parcel in section 4 T44N R31E (Klein and Koenig, 1977). Dyke Hot Springs system has an estimated reservoir temperature of 230° F and a mean reservoir electricity generation potential of 5 MWe (USDOE online data base, 2020, Hose and Taylor, 1974, Muffler, 1979, Garside and Shilling, 1979).

There are no current geothermal leases within the township in which the subject property lies nor within any of the adjacent townships, although there was a former lease over the Howard Hot Spring area. Should geothermal exploration and development occur in the future, the small footprint of the Pueblo Firehouse property should not be an impediment to exploration or development of this resource.

### **5.4. SODIUM, POTASSIUM, AND PHOSPHATE**

The subject area is mapped as prospectively valuable for sodium and potassium (Wayland et al, 1980). The subject property is located in a basin with historic playa lakes (*e.g.*, Lake Lahontan). There have been no historic or current exploration or mining activity for sodium, potassium, or phosphate associated with these areas. There is a low potential for mining of sodium (salt) from surface and below surface deposits due to historic lacustrine deposition; however, the economic potential is unknown. Well logs within the vicinity do not support the presence of sodium, potassium, or phosphate (State of Nevada, Division of Water Resources online Well Log Search) in the upper layers of the valley fill.

### **5.5. METALLIC MINERALS**

Based on the estimated depth to pre-Cenozoic bedrock under the subject parcel, exploration for and development of potential gold bearing veins similar to those present in the nearby Pine Forest Range (as discussed above) or other gold deposit targets would be very difficult and costly and is thus highly unlikely.

Placer deposits are also not anticipated due to observations during the site visits. Moderate potential for gold placer deposits exist along the range front of the Pine Forest Range to the west due to the presence of gold bearing quartz veins within the range

## 5.6. URANIUM AND THORIUM

The subject property is not considered prospectively valuable for the development of uranium deposits within the area. An area prospective for pluton related vein uranium deposits exists approximately 20 to 25 miles south of the subject property, in the northern Jackson Mountain Range. A site in the Leonard Creek district, approximately 15 miles southwest of the subject parcel is listed as a volcanogenic uranium prospect. Known volcanic uranium occurrences occur in the McDermitt Caldera complex associated with rhyolitic ring dome and intrusives approximately 25 miles to the northeast. The Moonlight Mine, located along the western margin of the McDermitt Caldera is a former low-grade uranium producer associated with fault controlled veins. (Final Mineral Assessment Report Winnemucca District, BLM, 2006, Willden, 1962).

## 5.7. NONMETALLIC MINERALS/INDUSTRIAL MINERALS

Nonmetallic minerals include barite, carbonate minerals (limestone and dolomite), diatomite, fluorspar, gypsum, perlite, silica, talcose minerals, wollastonite, and zeolites. Other locatable industrial minerals include garnet, graphite, magnesium minerals and vermiculite. There is low potential for development of these based on no previous (recorded) mining for these commodities, low favorability of host rock, and geologic conditions.

## 5.8. COMMON VARIETY MINERALS

Common variety minerals are salable minerals, including sands, silts, clays, gravels, building stone, pumice and cinders, and are sold under mineral material site permits. The surface geology in the immediate area of the subject sections is primarily sands, silts, and gravels. mineral material sites)

There is a low potential for obtaining commercial sand and gravel from the parcel, except perhaps for local usage due to the distance from potential markets. Similar resources to those present on the subject parcel occur close by if local need for said resources is indicated. The Master Title Plat shows material sites in section 1 and to the north in T44N, R31E, sec 35, clearly associated with SR140. There is also a Free Use Permit and a commercial material site shown in section 31 of T43N, R31E.

## 5.9. MINERAL POTENTIAL CLASSIFICATION

The mineral potential classification system is included in Section 7. This classification system was applied to the parcels as follows:

<b>Mineral Potential</b>	<b>R&amp;PP</b>
Coal	O/D
Oil and Gas	L/D
Geothermal	M/C
Sodium, Potassium, and Phosphate	L/D

<b>Mineral Potential</b>	<b>R&amp;PP</b>
Metallic Minerals	L/D
Uranium and Thorium	L/D
Nonmetallic Minerals/Industrial Minerals	L/D
Common Variety Minerals	L/C
Prospectively Valuable Classification	L/C

## **SECTION 6.0 – SURFACE INTERFERENCE**

There are no mineral encumbrances such as mining claims, leases or mineral material sites located within the boundary of the subject lands. Due to the small footprint of the proposed Fire Station parcel sale, and its location adjacent to the south side of Big Creek Road as well as the existing private property/infrastructure adjacent to the north side of Big Creek Road, no interference to the development of mineral resources is anticipated, should valuable mineral resources be discovered on or near the subject parcel in the future.

## **SECTION 7.0 – MINERAL POTENTIAL CLASSIFICATION SYSTEM\* (BLM, 1985)**

- I. Level of Potential
  - O. The geologic environment, the inferred geologic processes, and the lack of mineral occurrences do not indicate potential for accumulation of mineral resources.
  - L. The geologic environment and the inferred geologic processes indicate low potential for accumulation of mineral resources.
  - M. The geologic environment and the inferred geologic processes reported mineral occurrences or valid geochemical/geophysical anomaly indicate moderate potential for accumulation of mineral resources.
  - H. The geologic environment, the inferred geologic processes, the reported mineral occurrences and/or valid geochemical/geophysical anomaly, and the known mines or deposits indicate high potential for accumulation of mineral resources. The “known mines and deposits” do not have to be within the area that is being classified, but have to be within the same type of geologic environment.
  - ND. Mineral(s) potential not determined due to lack of useful data.  
This notation does not require a level-of-certainty qualifier.
  
- II. Level of certainty
  - A. The available data are insufficient and/or cannot be considered as direct or indirect evidence to support or refute the possible existence of mineral resources within the respective area.
  - B. The available data provide indirect evidence to support or refute the possible existence of mineral resources.
  - C. The available data provide direct evidence but are quantitatively minimal to support or refute the possible existence of mineral resources.

- D. The available data provide abundant direct and indirect evidence to support or refute the possible existence of mineral resources.

\*As used in this classification, potential refers to potential for the presence (occurrence) of a concentration of one or more energy and/or mineral resources. It does not refer to or imply potential for development and/or extraction of the mineral resource(s). It does not imply that the potential concentration is or may be economic, that is, could be extracted profitably.

## **SECTION 8.0 – CONCLUSIONS**

Based on the site visits and the study of the available information on the subject land it is concluded that all the lands under consideration for the R&PP have a low potential for the development of locatable, leasable, and salable minerals due to the presence of more favorably located sources.

From the review of this mineral potential report and the field reconnaissance performed on the subject land, it is recommended, with regard to mineral resources, that the subject lands, be classified for disposal under the R&PP Act.

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