3809 [940]
CACA-056495

Memorandum Report

Determination of Physical Exposure of a Locatable Mineral on Segregated Lands:

Perdito Project, Inyo County, California

To: Carl Symons
Ridgecrest Field Office Manager

Aug 14, 2017
I acknowledge receipt

Through: Mark R. Chatterton
Certified Review Mineral Examiner # 033
California State Office

I concur
Aug 9, 2017

From: Michael Smith
Certified Mineral Examiner # 158
California State Office

Aug 8, 2017

I concur: Matthew W. Shumaker
Chief Mineral Examiner
Certified Review Mineral Examiner No. 028
Washington Office, Division of Solid Minerals

August 24, 2017

Subject:

Determination of the physical exposure of a locatable mineral deposit on the following lode mining claims: EX 1, EX 2, EX 7, EX 8, EX 10, EX 11, MESA 3, MESA 13, MESA 26, CMP 1, CMP 2, CMP 4, CMP 5, CMP 6, CMP 7, CM 2, CM 4, CM 6, CM 8, CM 10, CM 12, CM 40, FAT 148, FAT 150, FAT 172, FAT 174, FAT 176.

Summary:

SSR Mining Inc. (formally Silver Standard Resources Inc.) has a pending plan of operations (CACA-056495), referred to as the Perdito project, to complete exploratory drilling in the Conglomerate Mesa Area of the Inyo Mountains in Inyo County, California. The area encompassing the Perdito project has be segregated from entry under the mining law until December 28, 2018 (Federal Register vol. 81, No.249, p. 95738, Dec. 28, 2016). Pursuant to 43 CFR 3809.100(a) and section 8.1.1.2 of H-3809-1 (Surface Management Handbook), the Bureau of Land Management (BLM) completed a study to determine whether a physical exposure of a locatable mineral deposit existed prior to the date of segregation within the claims associated with the Perdito project. This report was prepared for documenting compliance with BLM regulations and BLM policy and is not to be used for any other purpose. No part of this report shall be interpreted as evidence regarding the validity of any mining claim examined.

Conclusions:

A physical exposure of a locatable mineral deposit existed on the subject claims as of the Dec. 28, 2016 segregation date. Evidence of mineralization consistent with sedimentary-hosted disseminated-replacement type gold deposits (a.k.a Carlin-type deposits) were widely observed across the subject claim block. Assay data from five of six outcrop samples collected May 15-16, 2017 indicated anomalous (20 ppb or greater) concentrations of gold.

Recommendations:

It is recommend that the Ridgecrest Field Manager exercise the discretion allowed under 43 CFR 3809.100(b) and allow the operations proposed by SSR Mining Inc. in CACA-056495 to proceed without requiring a mineral examination and validity determination if the purpose of the segregation supports such a decision.

1.0 Introduction

1.1 Background: On December 4, 2015, Silver Standard U.S. Holdings Inc. (Operator – now SSR Mining Inc.) submitted a plan of operations (CACA-056495) to the Ridgecrest Field Office (RIFO) of the BLM. The proposed operation consists of completing seven exploratory drillholes, reopening and improving approximately two miles of access road, and subsequent site reclamation. The area of operations encompasses Public lands managed by the BLM in portions of sections 32 and 33 of T. 16 S. R. 39 E., MDM and portions of sections 3, 4, 9, and 10 of T. 17 S., R. 39 E. MDM. The twenty-seven lode mining claims identified in the plan of operations are inventoried in Table 1 below:

Table 1: Mining claims identified in the Perdito project plan of operations

CLAIM NAME	SERIAL NUMBER	LOCATION DATE	GENERAL LOCATION
EX1	CAMC 306408	Jan. 3, 2013	S3, 4, 9 & 10, T.17S., R.39E.
EX2	CAMC 306409	Jan. 3, 2013	S3 & 4, T.17S., R.39E.
EX7	CAMC 306414	Jan. 3, 2013	S3 & 10, T.17S., R.39E.
EX8	CAMC 306415	Jan. 3, 2013	S3,T.17S., R.39E.
EX10	CAMC 306417	Jan. 3, 2013	S3,T.17S., R.39E.
EX11	CAMC 306418	Jan. 3, 2013	S3,T.17S., R.39E.
MESA #3	CAMC 264621	Sep. 2, 1994	S3 & 10, T.17S., R.39E.
MESA #13	CAMC 267107	Sep. 1, 1995	S3 & 10, T.17S., R.39E.
MESA #26	CAMC 264625	Sep. 3, 1994	S10, T17S, R39E
CMP 1	CAMC 280789	Dec. 19, 2002	S3, 4 & 9, T.17S., R.39E.
CMP 2	CAMC 280790	Dec. 19, 2002	S4 & 9, T.17S., R.39E.
CMP 4	CAMC 280792	Dec. 19, 2002	S4 & 9, T.17S., R.39E.
CMP 5	CAMC 280793	Dec. 19, 2002	S9, T.17S., R.39E.
CMP 6	CAMC 280794	Dec. 19, 2002	S4 & 9, T.17S., R.39E.
CMP 7	CAMC 280795	Dec. 19, 2002	S9, T.17S., R.39E.
CM 2	CAMC 267756	Dec. 2, 1995	S4, T.17S., R.39E.
CM 4	CAMC 267758	Dec. 2, 1995	S4, T.17S., R.39E.
CM 6	CAMC 267760	Dec. 2, 1995	S4, T.17S., R.39E.
CM 8	CAMC 267762	Dec. 2, 1995	S4, T.17S., R.39E.
CM 10	CAMC 267764	Dec. 2, 1995	S4, T.17S., R.39E.
CM 12	CAMC 267767	Dec. 2, 1995	S4, T.17S., R.39E.
CM 40	CAMC 267787	Dec. 2, 1995	S10, T.17S., R.39E.
FAT 148	CAMC 269063	Mar. 16, 1996	S4,T.17S., R.39E.
FAT 150	CAMC 269065	Mar. 16, 1996	S4,T.17S., R.39E.
FAT 172	CAMC 293567	Oct. 14, 2008	S4,T.17S., R.39E.
FAT 174	CAMC 293565	Oct. 14, 2008	S32 & 33, T.16S., R.39.E; S4,T.17S., R.39E.
FAT 176	CAMC 293563	Oct. 14, 2008	S32 & 33, T.16S., R.39E.

A map of the project area showing the location within the State of California is shown in Figure 1.

On December 28, 2016, the California State Office of the BLM published a notice of proposed withdrawal of approximately 1.34 million acres from location and entry under the Mining Law of 1872 (Federal Register vol. 81, No.249, p. 95738, Dec. 28, 2016). This notice also segregates the proposed withdrawal area for a period of two years, subject to valid existing rights. The area encompassing the segregated area includes the lands involved in the Perdito plan of operations. Pursuant to 43 CFR 3809.100(a) the Bureau of Land Management (BLM) may require the preparation of a mineral examination report before approving a plan of operations or allowing notice-level operations to proceed on segregated lands. BLM policy (Surface Management Handbook, H-3809-1, section 8.1.1.2) recommends that BLM Field Managers request evidence from the operator that a physical exposure of a locatable mineral deposit existed as of the segregation date. If the operator can show an exposure of a locatable mineral deposit was disclosed before the segregation date, the BLM manager may exercise discretion under 43 CFR 3809.100(a) on a case-by-case basis before deciding whether to approve a Plan of Operations without first conducting a mineral examination if the purpose of the segregation supports such a decision.

Criteria for establishing exposure on a lode claim is defined in Jefferson-Montana Copper Mines Co., 41 LD 320 (1912), which states in part that: 1) there must be a vein or lode of quartz or other rock in place; and 2) the vein or other rock-in-place must carry gold or some other valuable mineral. This report summarizes BLM's investigation and conclusion regarding the exposure of a locatable mineral deposit in the operational area of the Perdito plan of operations

1.1 Land Status: Review of Master Title Plats (MTPs) did not identify any encumbrances or closures to entry other than the segregation notice of December 28, 2016 (Appendix 1). Parts of Sections 9 and 10 of T. 17 S. R. 39 E. are within the Malpais Mesa Wilderness Area, but no part of the project area is within this Wilderness. A review of the BLM Legacy Rehost 2000 (LR2000) database has determined that all of the subject mining claims were located prior to the segregation date (Appendix 2). No conflicting lands actions were identified in any of the sections containing the subject claims (Appendix 2).

1.2 Access: The Perdito plan of operations area is accessed along existing paved and unpaved roads. From the junction of US Highway 395 and California Route 190 in Olancha, CA, proceed 14.5 miles northeast on CA 190 to the junction with CA Highway 136 to Lone Pine. Stay on CA 190 by turning southeast (right), and proceed nine miles to the junction with the unpaved Saline Valley Road. Follow the Saline Valley Road approximately northeast for nearly 6.6 miles to the Junction with BLM Road S4. Turn slightly left onto the BLM Road S4 and proceed approximately 6.5 miles. There will be an unmarked, unpaved road to the left and veering approximately west-southwest (a BLM road marker is at the junction), this is part of the original access road into the projected area and was developed during previous exploration efforts. This road can be driven approximately 1.7 miles to the eastern edge of the project area, corresponding to the western half of the EX 11 lode claim. Access to the proposed drilling sites is currently by foot only.

1.3 Physical Features: The Perdito Plan of Operations area is located in the southern Inyo Mountains and roughly centered on an uplift known as Conglomerate Mesa, an elevated plateau bordered by the Owens Valley on the west and by Lee Flat and the Nelson Range to the east. The late Cenozoic basaltic

lava field of Malpais Mesa are situated to the southeast of the Mesa. Elevations range from approximately 6,400 to 7,400 feet above mean sea level. Slopes range from gentle (less than 10 degrees) in the valley floors to nearly vertical at the summits of local peaks and mesas (Figure 1).

1.4 Field Work:

The claims were visited on May 15-16, 2017. The following individuals were present during the field visit (Table 2):

Table 2: Individuals participating in the field inspection of the Perdito project affiliated claims

Name of Individual	Title	Affiliation	Dates Present
Stephen Allen	Geologist, MEC[1]	BLM: California State Office	May 15-16, 2017
Angela Johnson	Geologist, P. Geo.[2]	SSR Mining Inc.	May 16, 2017
Randall Porter	Geologist	BLM: Ridgecrest Field Office	May 15-16, 2017
Michael Smith	Geologist, CME[3]	BLM: California State Office	May 15-16, 2017

Fieldwork consisted of walking the entire length on the proposed access road, inspecting a representative selection of outcrops, and collecting selective outcrop samples for assay. Representative photographs and notes of outcrop inspections were archived. Reference points located consist of the southwest corner monument of the Mesa 26 lode claim and the southeast corner monument of the CMP 1 lode claim. The location of all reference points were recorded using GPS. Six of the seven proposed drill locations were identified in the field; the exception being proposed exploratory borehole number 5. This proposed drill site was located at the end of a reclaimed, steeply sloping section of the planned access road and accessing by foot prior to road construction was determined too hazardous. Locations of the proposed drill holes and access road are shown in Figure 2.

An AutoCAD file of the subject claim-block boundaries was provided by the proponent, and is used in Figure 2 and all other maps showing the subject claim block. This AutoCAD file was modified in ArcMap GIS to display the subject lode claims only. Comparisons with a claim map prepared by a previous operator and with the previously mentioned field reference point indicated that this AutoCAD file was offset by less than 700' to the north and approximately 400' to the west. This file was subsequently adjusted to align with the reference points located in the field.

2.0 <u>Geology, Mineralization and Mining History</u>

2.1 Geology of the project area: A field geologic map was not prepared because a detailed geologic map of the Conglomerate Mesa area has been developed by Stone et. al. (2009) and published by the U.S.

[1] Mineral Examiner Candidate
[2] Professional Geoscientist (Canada)
[3] Certified Mineral Examiner

Geological Survey. This map is partially reproduced in Figure 3, and the description of rock units provided by Stone et. al. (2009) is reproduced in Appendix 3. Field observations indicated that the map is generally accurate, but possible discrepancy in the Permian-Triassic boundary was observed in the western part of the project area (lode claim CM 4). In Figure 3, the map has been annotated to show the approximate claim boundaries and locations of samples collected May 15-16, 2017.

The geology of the Perdito project area reflects a history of multiple episodes of compression and extension of the Paleozoic to Mesozoic sediments. The predominant rock types mapped in the project area consist Permian-aged carbonates and shales and Triassic aged clastic sediments (Stone et. al., 2009). Pennsylvanian and Permian rocks deposited after the Antler Orogeny (early Mississippian) were subjected to compressional deformation beginning during the early Permian. Thrust faulting and folding formed a north-northeast-trending ridge called the Conglomerate Mesa Uplift. Lower and middle Permian rocks were deposited on the east flank of the resulting antiform. Subsequent episodes of deformation into the late Permian further elevated the Conglomerate Mesa Uplift, and several thousand meters of Permian carbonates, shales and sandstones accumulated against the uplift (Stone et. al., 2009).

Late Permian deformation and uplift was followed by deposition of the nonmarine, lower conglomerate member the Conglomerate Mesa Formation during the early Triassic. Clastic sedimentation was followed in the Early and Middle Triassic by regional subsidence of the continental margin and deposition of the marine shale, siltstone, sandstone, and limestone (Triassic Union Wash Formation) (Stone et. al., 2009). Locally, Quaternary aged alluvium deposits are present in drainages and Quaternary talus deposits occur at the base of slopes.

The north-trending segment of the proposed access road (Figure 2) roughly parallels a series of thrust faults that have locally overlain upper Permian rocks above Triassic clastic rocks (Figure 3). The main structural feature defining Conglomerate Mesa is the Malpais Fault described by Stone et. al. (2009). This fault strikes east-southeast and dips northward along this southern segment of the Mesa, but bends northward both east and west of Conglomerate Mesa into oblique strike-slip faults. Stone et. al. (2009) interpret the Malpais fault as the dislocation surface along which the structural block (the hanging wall) of Conglomerate Mesa moved down and northward relative to the footwall rocks outside. Late Cenozoic structural developments included the development of normal faulting associated with Basin-and-Range extensional tectonics. Faulting is considered the principle control on mineralization in the Perdito Project Area (Angela Johnson, SSR Mining Inc., personal communication, 2017).

2.2 Mineralization: The deposit has been described as a Carlin-type disseminated gold deposit (Angela Johnson, SSR Mining Inc., personal communication, 2017). This class of deposits are also generally referred to as hydrothermal disseminated-replacement type gold deposits, or sedimentary-hosted gold deposits. Characteristics of these deposits include gold-pyrite-silica association; exceedingly fine-grained ore minerals; gold ore localized along high-angle faults and in brecciated sedimentary rocks, fine-grained silicification and argillization (Radtke, 1985). Visible gold is rare and base-metal minerals are very uncommon. Identified Carlin-type deposits in North America have median tonnage of 7.1 Mt

and median grade of 2.0 g/t Au, and approximately 10 percent of all deposits also report silver grades ranging from <0.1 to > 3.2 ppm (Berger et. al, 2014).

A frequent hydrothermal alteration indicator in sedimentary-hosted gold deposits silicification, which commonly takes the form of cryptocrystalline replacement of matrix material, microcrystalline jasperoid, and quartz stockwork veinlets and veins in fractures of altered host rocks (Li and Peters, 1998). This indicator is widely observed in the Perdito project area and is exposed in outcrop as fine-grained silica replacement and multiple intrusions of thin, discontinuous veinlets ranging from hairline fractures to almost 1" thick. This silica veining and replacement is observed in both carbonate and clastic sedimentary outcrops. Examples of silicification-type alteration observed during fieldwork are illustrated in photographs 1 and 2.

In Carlin-type sedimentary-hosted deposits, micron-sized gold is found in association with pyrite, quartz, Fe-oxide, As-pyrite, and clay minerals (Berger et. al, 2014). Iron oxide staining likely resulting from the oxidation of pyrite was visible in outcrop, particularly in late Permian- early Triassic clastic rocks. Similar evidence of pyrite-oxidation was infrequently observed in carbonate rocks. Staining occurred as diffuse, discontinuous tan to red-brown coloration that was most visible on foliation planes in fissile shales. Photograph 3 shows an example of this alteration as observed in outcrop.

No indications of other types of mineralization were observed in the study area or identified by the proponent. The California State Wilderness Study report rated most of the area surrounding the Perdito project as having moderate potential for silver, lead, zinc and copper, and areas less than one mile to north as having moderate potential for gold, silver lead and zinc (Bureau of Land Management, 1990).

2.3 Mining History: Silver-lead-zinc deposits in Cerro Gordo Mining District in the southern Inyo Mountains, approximately five miles northwest of the Perdito Project area, were discovered during over the period 1861-1866. Total production from this district is estimated at approximately 73,000,000 lbs. lead, 24,000,000 lbs. zinc, and 4,600,000 oz. silver (Bureau of Land Management, 1990). More than half of the lead and about three-fourths of the silver were produced during the period from 1869 through 1876. Within this district, the Cerro Gordo mine was one of California's leading silver and lead producer during the late nineteenth century. Other metals produced included an estimated 2,000 ounces of gold, 12,000 tons of zinc and 300 tons of copper (Taylor and Joseph, 1993). Other historic workings in the Cerro Gordo District included the Estelle and Morning Star mines.

The historic Santa Rosa Mine is located approximately 4.4 miles south-southeast of the Perdito Project Area. Mining began in 1911 after the discovery of oxidized lead, copper, zinc and silver bearing veins in silicified Permian limestone the previous year. Documented ore grades from 1948 and 1949 assayed at 15 percent lead and 6 oz./ton silver (MacKevett, 1953). By 1953, total production from the Santa Rosa Mine was 36,854 short tons of ore consisting of 11,990,792 pounds of lead, 487,347 pounds of copper, 4,105 pounds of zinc, 426,543 ounces of silver, and 478.7 ounces of gold (MacKevett, 1953). Patent was issued for six lode claims in the Santa Rosa claim group in 1922. The patented lands were donated back to the United States in 2004 and are now a parking area for visitors to the surrounding Malpais Wilderness Area (Randall Porter, BLM Ridgecrest Field Office, personal communication, 2017).

Talc was produced from replacement deposits in Ordovician dolomites near the junction of California Route 190 and the Saline Valley Road, approximately 15 miles south of the Perdito project area. High purity limestone deposits also occur in the vicinity, but their development was hindered by long transport distances to consumption centers (Hall and MacKevett, 1958).

Records of previous mining activities the Perdito project area are limited to past exploration projects. In October of 1996, BHP minerals submitted a Plan of Operations (CACA- 037380) to construct or improve nearly seven miles of access road and complete 85 exploratory boreholes. This Plan of Operations was authorized on June 30, 1997 and reclamation was completed in January 2007. Traces of the reclaimed access road can still be observed in the field, and this reclaimed road is being evaluated as one of the potential access route for the current proposal. Between 2007 and 2013, the Ridgecrest Field Office received two plans of operation (CACA- 054932 and CACA- 048889) and a notice (CACA-053189) for exploration in the Perdito project area. Both plans were withdrawn before approval and the incomplete notice expired without action. No indications of other past mineral development activity were observed during the field inspection.

3.0 Analytical data, sampling and sample analysis

3.1 Analytical data provided by the proponent: SSR Mining Inc. provided the results of 17 previously collected sample assays in response to a request from the Ridgecrest Field Manager. These samples were collected from outcrops near the proposed exploratory boreholes and were described as grab samples collected with a rock hammer (Angela Johnson, SSR Mining Inc., personal communication, 2017). The reported assay date is December 14, 2015, which predates the segregation order (December 28, 2016). A partial reproduction (gold and silver only) of the assay results and a map of the sample locations are presented in Appendix 4[4]. The data indicates that one of the assays (sample S167005) is from a sample outside of the Perdito project area, and is therefore not considered. In the remaining 16 samples, reported values for gold ranged from approximately 0 to 11 ppm and reported silver values range from approximately 0.4 and 4 ppm. Nine of the sixteen assays provided exceeded 2.9 ppm gold, which is the median grade of 118 Carlin-type sedimentary-hosted gold deposits studies by Berger et. al. (2014).

3.2 Sampling: Six chip samples for assay were collected during the field visit on May 15-16, 2017. Two of these samples were collected at locations chosen by the proponent's representative and the remaining four were collected at locations chosen by the Mineral Examiner. Most samples were collected near the vicinity of the proposed drill holes (Figure 3). All samples were taken in compliance with the BLM Handbook for Mineral Examiners (H-3890-1), page IV-1. Selected site locations were recorded using a Garmin eTrax GPS unit (accuracy 14 – 17')

Sites were selected, photographed before collection, measured and the surface cleaned to remove any loose material. A plastic tarp was placed below the sample location to prevent loss of sample material. The whiteboard was filled out and photographed at each sample site. The sample was taken with a rock-hammer and chisel or a two-pound crack hammer. The rock chips were collected from the tarp and

[4] Confidential and proprietary information, not for public release.

placed in an 8” x 11” polyurethane (PE) sample bag. A completed BLM form 3890-1 (Mineral Sample Record) was placed in each PE bag and the sample name was written on the bag in an indelible marker. The PE bag was then sealed with a numbered zip-tie and placed in a slightly larger (9½” x 12”) canvas bag. The site was again photographed showing the area sampled. After collection, all samples remained the possession of the author or were stored in a locked security room at the BLM California State Office until shipped to the assayers on May 23, 2017. Sample site locations, dates of collection and other pertinent data are summarized below in Table 3.

Table 3: Sample collection descriptions:

SAMPLE NAME	LOCATION	DATE	NOTES
BLM-CM-1	117° 44.455’W 36° 28.58’N	5/15/17	Sample location chosen by BLM mineral examiner, MESA 13 lode-claim. Altered grey-beige colored fissile shale and sandstone of the Ps9 unit of Stone et. al. (2009). Visible alteration consisted of minor silica replacement and red-ochre colored staining diagnostic of iron-sulfide oxidation. See photograph 4 for a picture of the sample site.
BLM-CM-2	117° 44.580’W 36° 28.528’N	5/15/17	Sample location chosen by BLM mineral examiner, MESA 3 lode-claim. Dark-grey to blackish grey micritic limestone. Extensive signs of silicification including thin (1” or less) vein of silica with minor calcite and hematite. Unit corresponds to Ps10 of Stone et. al. (2009) and sample was collected just above contact with Ps9 unit. Sampling was complicated by disseminated silicification, which made the limestone particularly hard and well indurated. See photograph 5 for a picture of the sample site.
BLM-CM-3	117° 44.871’W 36° 29.728’N	5/16/17	Sample location chosen by proponent’s representative, FAT 176 lode-claim. Corresponds to unit Tcc of Stone et. al. (2009). Grey-brown to dark tan conglomerate, with a sandy matrix of approximately 60 – 70%. Conglomerate clasts composed of limestone, quartzite, and siltstone. Primarily pebble sized clasts with few (<10%) cobble sized clasts. Alteration consists of silicification with minor sulfide emplacement. See photograph 6 for picture of sample site.
BLM-CM-4	117° 44.830’W 36° 29.615’N	5/16/17	Sample location chosen by BLM mineral examiner, FAT 174 lode-claim. Corresponds to Psb12 unit of Stone et. al. (2009). Tan to reddish brown sandstone and siltstone with minor conglomerate. Sandstone is altered by silicification as evident by silica replacement in matrix and minor (2” or less width) crosscutting veins of quartz. Iron oxide staining

			occurs along some joints. See photograph 7 for picture of sample site.
BLM-CM-5	117° 44.992'W 36° 29.178'N	5/16/17	Sample location chosen by BLM mineral examiner. CM 4 lode-claim. Reddish-tan to brown, massive sandstone to siltstone with thin, wavy bedding. Field observations of this outcrop are consistent with unit Tul of Stone et. al. (2009), but unit was mapped as Ps7 by these authors. Alteration consists of silicification. See photograph 8 for picture of sample site.
BLM-CM-6	117° 44.895'W 36° 28.383'N	5/16/17	CMP 5 lode mining claim. Sample location chosen by proponent's representative, who reported previous assays measured gold values of 4000 – 6000 ppb. Yellow-grey to grey fissile sandy shale corresponding to unit Ps9. Extensive oxidization staining observed on foliation faces. See photograph 9 for picture of sample site.

3.3 Analysis and results: All samples were analyzed by Skyline Assayers and Laboratories of Tucson, Arizona; an ISO/IEC 17025 accredited facility (certificate 2953.01). Samples were dried and weighted by the lab, and crushed to > 95% passing 150 mesh. All samples were assayed for gold and silver. Gold was measured by fire assay and Atomic Adsorption (analytical limits: 5 – 3000 ppb) and silver measured by fire assay with gravimetric finish (analytical limits: 3 – 1000 ppm). Assay results were received from Skyline Assayers and Laboratories on July 5, 2017. The certificate of analysis prepared by Skyline Assayers and Laboratories are included in its entirety in Appendix 5, and the results are summarized in Table 4 below:

Table 4: Assay results for samples collected by BLM staff, Perdito Project May 15-16. 2017:

SAMPLE NAME	Gold (ppb)	Silver (ppm)
BLM-CM-1	188	< 3
BLM-CM-2	< 5	< 3
BLM-CM-3	28	< 3
BLM-CM-4	27	< 3
BLM-CM-5	20	< 3
BLM-CM-6	> 3000	4

4.0 Discussion

Criteria for determination of physical exposure is outlined in the Jefferson-Montana Copper Mines Co. decision, 41 L.D. 320 (1912), which states in part: 1. there must be a vein or lode of quartz or other rock-in-place; and 2. the quartz or other rock-in-place must carry gold or some other valuable mineral deposit. This decision does not define the values that must be detected in quartz or rock in place. SSR Mining Inc. considers assay values in excess of 20 ppb gold to be anomalous (Angela Johnson, SSR Mining Inc., personal communication, 2017). This value considerably exceeds published estimated of the background crustal concentration of gold ranging from 1 – 6 ppb (Taylor, 1964; Jones, 1972; Butterman and Amey, 2005).

Five of the six assays equal or exceed the 20 ppb anomaly threshold (Table 4). The highest gold concentrations (samples BLM-CM-1 and BLM-CA-6) are associated with the altered, light brown to ochre fissile Permian shales. In outcrop, these units display reddish to brown staining diagnostic of sulfide oxidation; suggesting the occurrence of gold in association with pyrite and arsenopyrite (Li and Peters, 1998). Concentrations of gold were lower in silicified conglomerates and sandstones (samples BLM-CM-3, BLM-CM-4 and BLM-CM-5), but still equaled or exceeded the 20 ppb threshold (Table 4). Only one sample did not contain detectable gold (BLM-CM-2).

The occurrence of silver is reported in approximately 10 percent of sediment hosted gold deposits (Berger et. al., 2014). However, none of the samples contained significant concentrations of silver (Table 4).

5.0 Physical Exposure Determination

It is the professional opinion of the author that a physical exposure of a locatable mineral (gold) is present on the subject claims prior to the date of segregation from entry on December 28, 2016. Alteration consistent with Carlin-trend type sedimentary-hosted gold deposits is observed throughout the Perdito project area. This alteration consists primarily of silicification of the host rocks, with lesser sulfide emplacement and minor albitization, particularly in association with late Permian shales. Assays by the proponent completed one year prior to the segregation date exhibited concentrations of gold well in excess of crustal average (approximately 4-5 ppb). Assayed gold and silver values from samples collected by BLM during May 15-16, 2017 were generally lower than assay results provided by the proponent (Appendix 4), nevertheless, gold concentrations in five of these six assayed samples exceed both crustal average (approximately 4-5 ppb) and the proponent's criteria for anomalous concentration (20 ppb).

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http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc

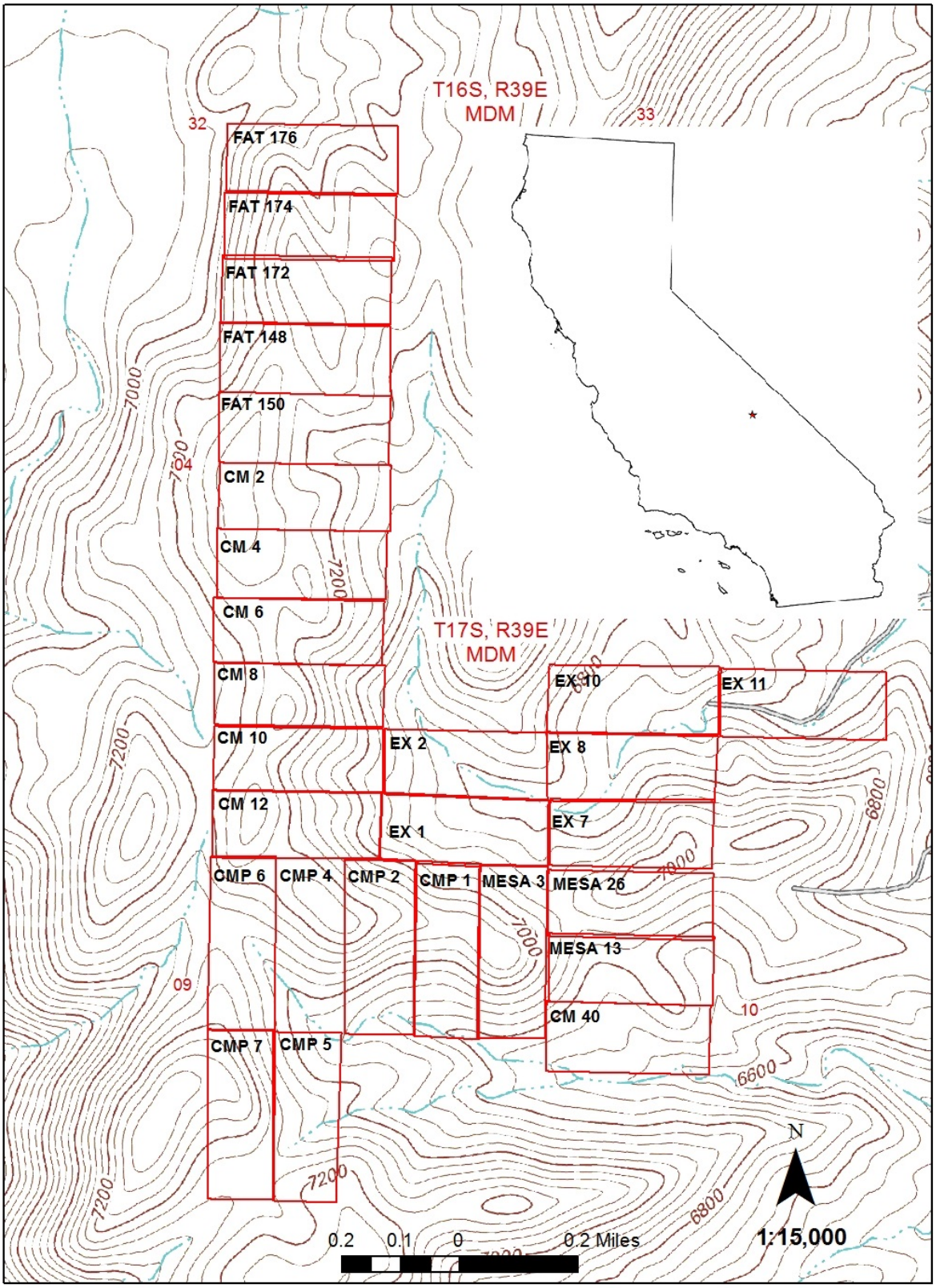


Figure 1: Location and topography of the proposed Perdito exploratory drilling project (Sources: SSR Mining Inc and California BLM State Office GIS).

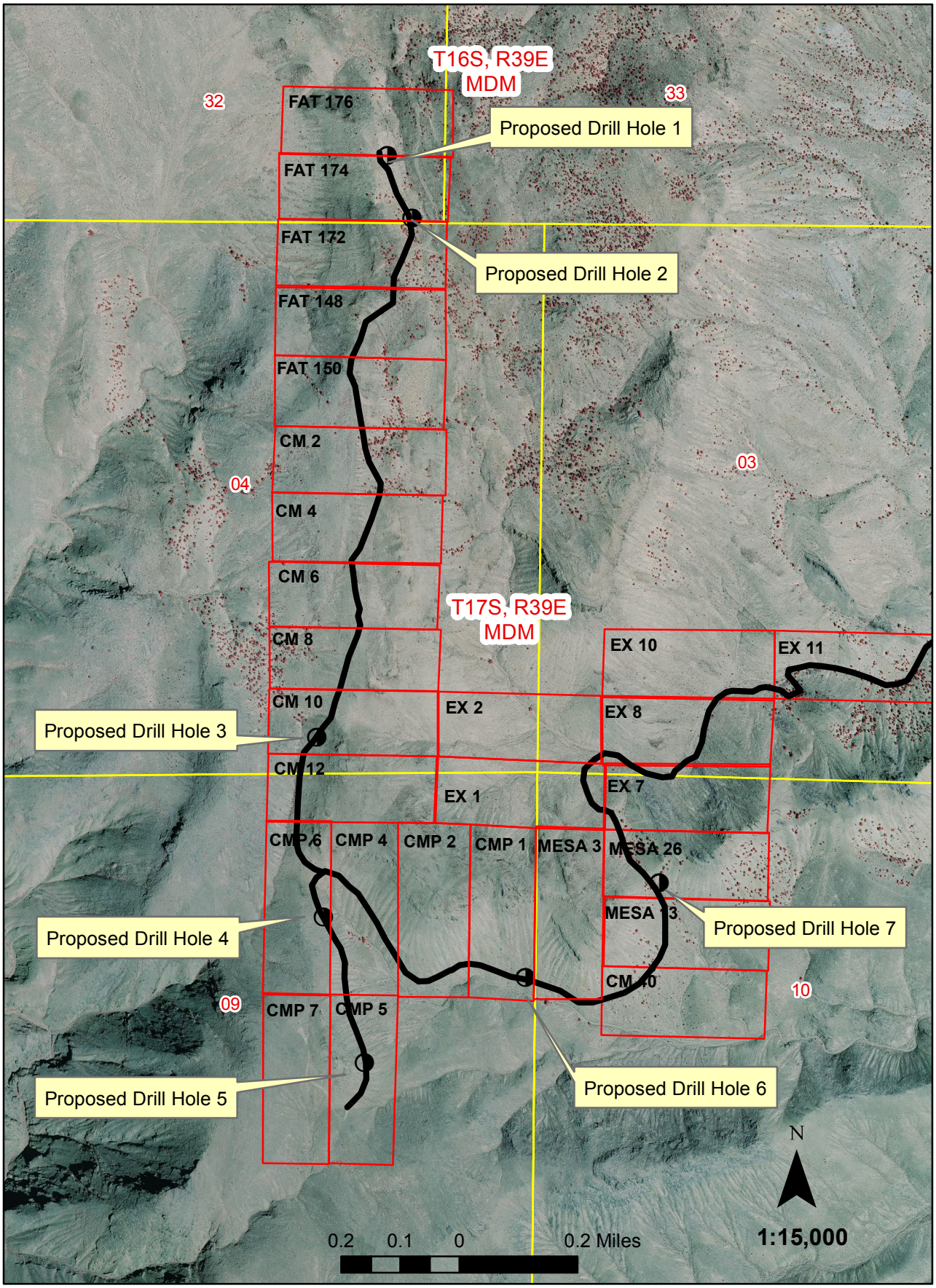


Figure 2: Proposed layout of Perdito Project as specified in Plan of Operations CACA-056495. Proposed operations consist of developing 7 exploratory drillholes and reopening approximately 2 miles of previously reclaimed access road (Source: SSR Resources Inc. and BLM California State Office GIS).

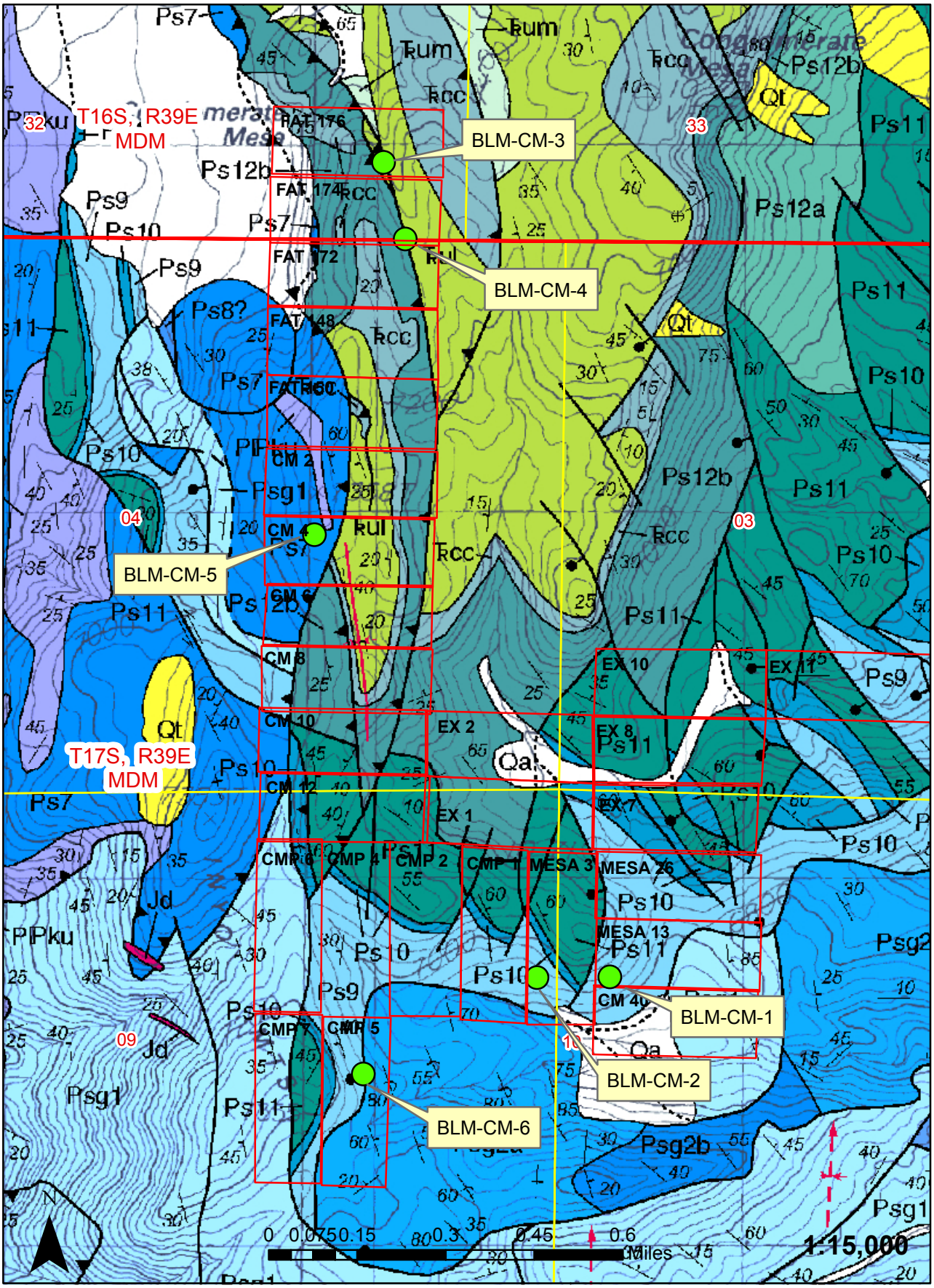


Figure 3: Geology of the of Perdito Project area, adapted from Stone et. al. (2009). Refer to Appendix 3 for a discussion of map units. Green markers denote location of BLM sample points collected May 15-16, 2017.

PHOTOGRAPHS

Photograph 1: Outcrop of massive dark-grey Permian limestone along the proposed access road and near the boundary of the EX 10 and EX 11 lode claims. Silicification-type alteration is visible in the form of thin silica veinlets. Up-close observation indicates partial replacement of carbonate matrix with microcrystalline quartz or jasper. Photograph taken by BLM Geologist Michael Smith on May 15, 2017.

Photograph 2: Example of silicic alteration in clastic sedimentary units at the Perdito project site in Triassic (?) aged reddish-brown to grey silty sandstone. Numerous thin, crosscutting veins of silica with minor hematite can be observed. FAT 174 lode-claim. Photograph taken by BLM Geologist Michael Smith on May 16, 2017.

Photograph 3: Altered Permian shale observed in outcrop on the MESA 13 lode claim, north of the access road and approximately 10 feet west of the first sampling site (sample BLM-CM-1). The highly fissile yellow-beige shale brakes into irregular-shaped flat clasts roughly 1 – 4” in length. Iron oxide staining indicative of pyrite oxidation is frequently observed on fabric surface. A few thin (1/2 – 1”) veinlets of quartz and calcite crosscut the foliation planes at irregular intervals. Hammer in photograph is approximately 1’ in length. Photograph taken by BLM Geologist Michael Smith on May 15, 2017.

Photograph 4: Sample BLM-CM-1 location on the MESA 13 lode-claim. Grey-brown to beige colored shale displays certain features diagnostic of Carlin-type sediment-hosted deposits (silicification and sulfidation). Some thin (1" wide or less) silica dikes cutting across laminae were observed in outcrop. Sample face was approximately 2' long by 6" wide and cut across fissile planes. Photograph taken by BLM Geologist Michael Smith on May 15, 2017.

Photograph 5: Sample BLM-CM-2 location on the MESA 3 lode-claim. Outcrop consists of dark-grey to grey micritic limestone altered by silicification and probably partial decarbonization. Corresponds to Ps10 unit (note contact with underlying Ps9 unit). Thin (1" or less thickness) veins of quartz cut approximately perpendicular to strike. Exposed rock was very hard which complicated sampling. Chip sample was collected across an approximately 2' x 1' area. Photograph taken by BLM Geologist Michael Smith on May 15, 2017.

Photograph 6: Sample BLM-CM-3 location on the FAT 176 lode-claim. Sample location chosen by proponent's representative. Grey-brown to dark tan pebble-clast conglomerate, with an approximately 60-70% sandy matrix. Alteration consists of silicification with minor sulfide emplacement. Chip sample was collected across an approximately 4' x 1' area. Photograph taken by BLM Geologist Michael Smith on May 16, 2017.

Photograph 7: Sample BLM-CM-4 location on the FAT 174 lode-claim. Tan to reddish brown sandstone and siltstone with minor conglomerate. Alteration consists of silicification and minor sulfide-emplacement inferred by the presence of minor amounts of iron oxides. Sample was collected over an approximately 3’ x 8” area. Photograph taken by BLM Geologist Michael Smith on May 16, 2017.

Photograph 8: Sample BLM-CM-5 location on the CM 4 lode-claim. The geologic map prepared by Stone et. al. (2009) mapped this outcrop as light-grey massive fossiliferous limestone (unit Ps7) but the outcrop in the field was thin-bedded to massive reddish-tan to brown sandstone more consistent with unit Tul described by Stone et. al. (2009). This discrepancy possibly reflects inaccuracies in the mapping or GPS unit readings. Alteration consists of silicification, including the emplacement of small (1" width or less) silica veins. Photograph taken by BLM Geologist Michael Smith on May 16, 2017.

Photograph 9: Sample BLM-CM-6 location on the CMP 5 lode-claim. Yellow-grey to grey fissile sandy shale with iron oxide staining on foliation faces. Outcrop corresponds to unit Ps9 in Stone et. al. (2009). Sample collected perpendicular to foliation over a 25” x 10” area to approximately 4” depth. Previous assays of this outcrop are reported to have exceeded 4000 ppb gold (Angela Johnson, SSR Mining Inc. Inc., personal communication, 2017). Photograph taken by BLM Geologist Michael Smith on May 16, 2017

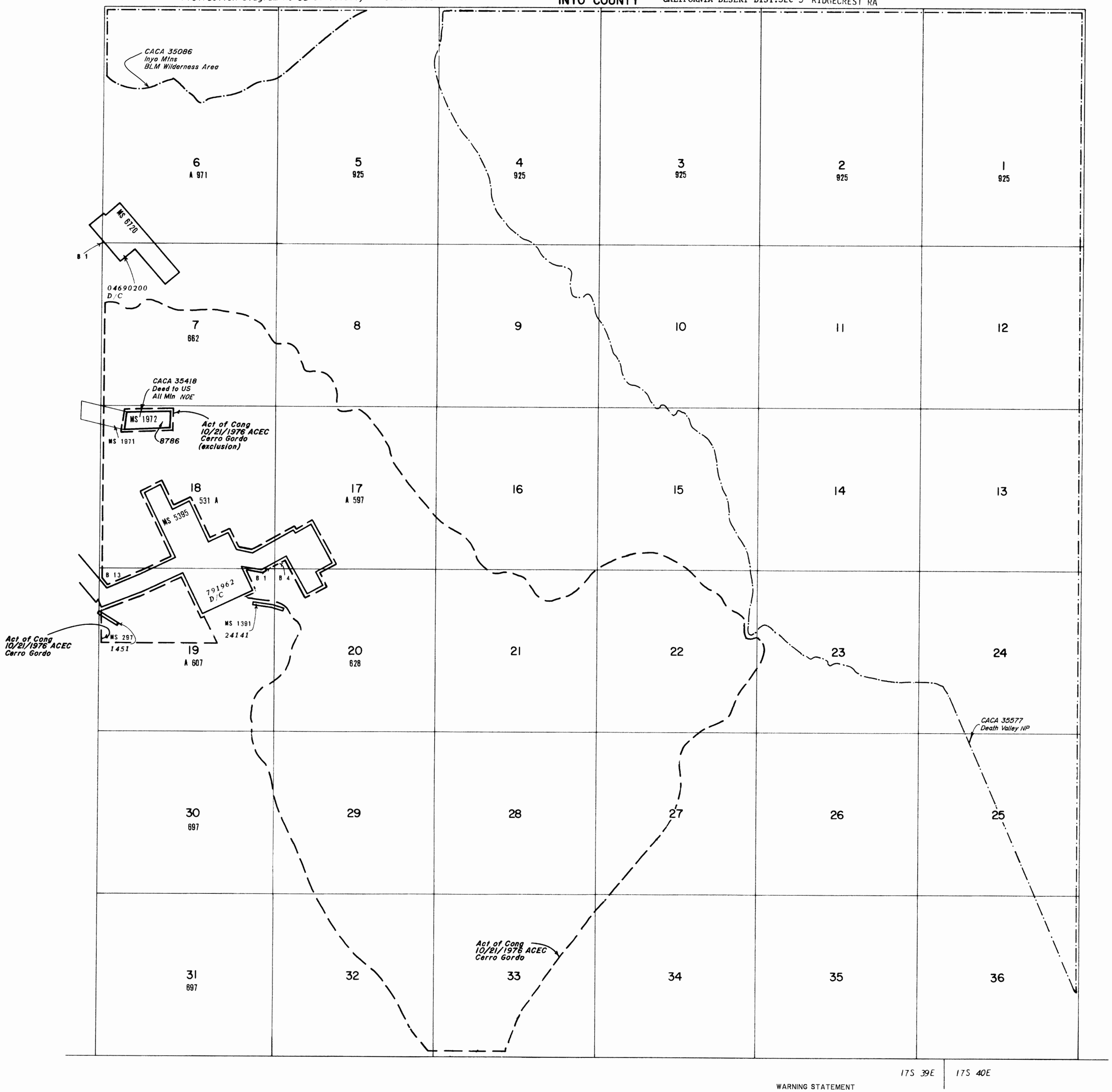
APPENDIX 1:

MASTER TITLE PLATS

UNSURVEYED TOWNSHIP 16 SOUTH RANGE 39 EAST OF THE MOUNT DIABLO MERIDIAN, CALIFORNIA

Protraction Diagram No 62 Officially Filed 3/3/1969

INYO COUNTY CALIFORNIA DESERT DIST. SEC 3 RIDGECREST RA



STATUS OF PUBLIC DOMAIN LAND AND MINERAL TITLES

MT PLAT

INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION

All Tp included in Wdl Calif Gr Dist No 1 SO 4/8/1935

All Tp within designated California Desert Conserv Area Act of Cong 10/21/1976

CA 15867 State's entitlement to School Lands has been relinquished 9/19/1984
Sec 16: All
Sec 36: All

FOR ORDERS EFFECTING OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERAL, WATER AND/OR OTHER PUBLIC PURPOSES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

SCALE
10 5 0 10 20 30 60

WARNING STATEMENT

This plat is the Bureau's Record of Title, and should be used only as a graphic display of the township survey data. Records hereon do not reflect title changes which may have been effected by lateral movements of rivers or other bodies of water. Refer to the cadastral surveys for official survey information.

MDM

CURRENT TO	
08-05-2014	ACH

T16S
R39E

USE PLATS

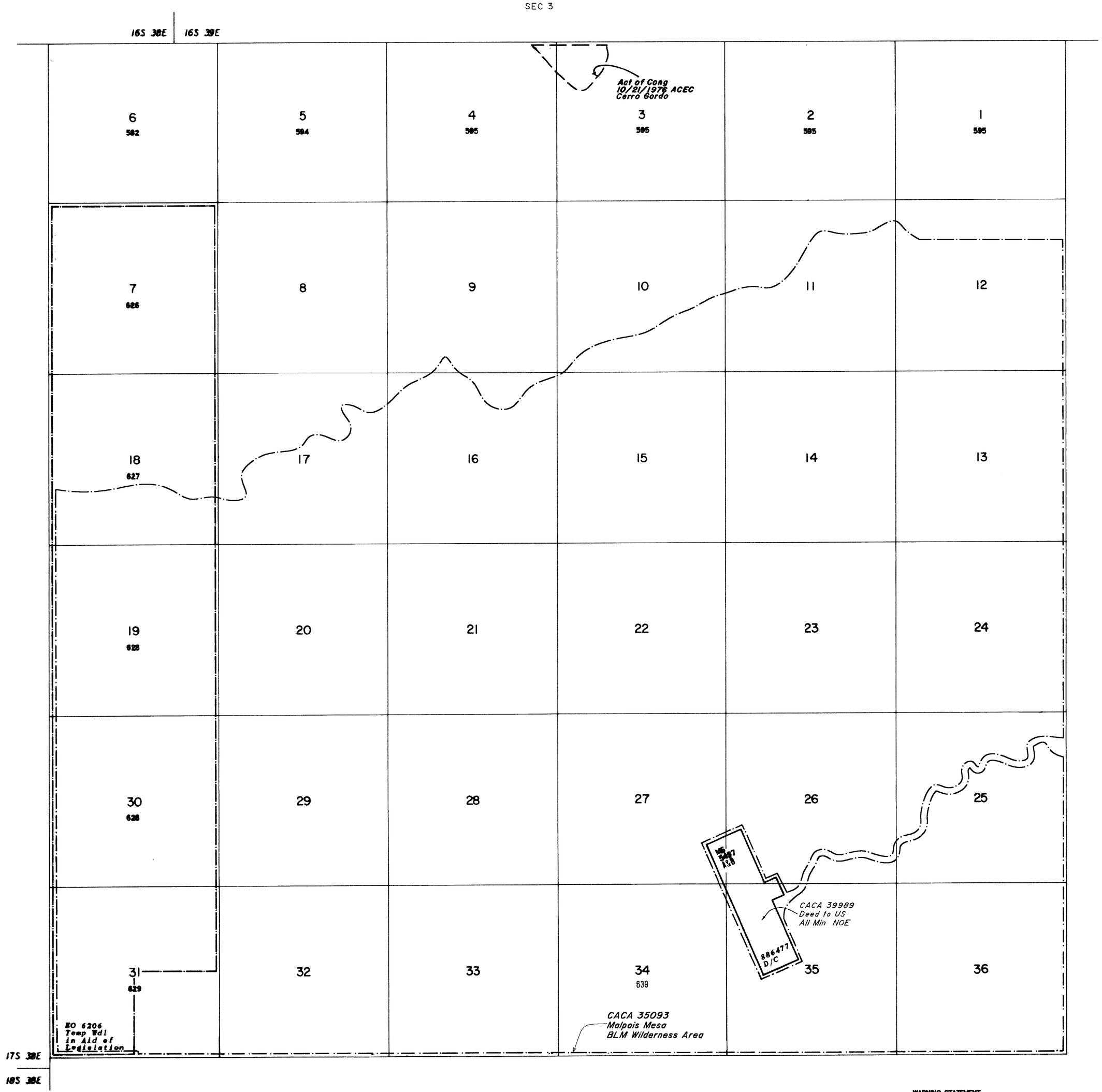
TOWNSHIP 17 SOUTH RANGE 39 EAST OF THE MOUNT DIABLO MERIDIAN, CALIFORNIA

Protraction Diagram No 35 Officially Filed 9/8/1970

RIDGECREST FIELD OFFICE
INYO COUNTY
SEC 3

STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

MT PLAT



INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION

All Tp included in Wdl Calif Gr Dist No 1 SO 4/8/1935

All Tp within designated California Desert Conserv Area Act of Cong 10/21/1976

CA 15867 State's entitlement to School Lands has been relinquished 9/19/1984
Sec 16: All
Sec 36: All

FOR ORDERS AFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

SCALE in chains
10 5 0 10 20 30 60

WARNING STATEMENT
This plat is the Bureau's Record of Title, and should be used only as a graphic display of the township survey data. Records hereon do not reflect title changes which may have been effected by lateral movements of rivers or other bodies of water. Refer to the cadastral surveys for official survey information.

MD Mer

CURRENT TO		
6-5-2014	ACH	T 17 S R 39 E

APPENDIX 2:

BLM-LR2000 GEO REPORT OUTPUT

MTRS: 21 0160S 0390E 032

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC271324	SW	FAT 211	VAN ERT STEVEN J	CAMC271314	LODE	ACTIVE	01/09/1997	2017
CAMC271326	SW	FAT 213	VAN ERT STEVEN J	CAMC271314	LODE	ACTIVE	01/09/1997	2017
CAMC271328	SW	FAT 215	VAN ERT STEVEN J	CAMC271314	LODE	ACTIVE	01/09/1997	2017
CAMC271330	SW	FAT 217	VAN ERT STEVEN J	CAMC271314	LODE	ACTIVE	01/09/1997	2017
CAMC271332	NW,SW	FAT 219	VAN ERT STEVEN J	CAMC271314	LODE	ACTIVE	01/09/1997	2017
CAMC271334	NW	FAT 221	VAN ERT STEVEN J	CAMC271314	LODE	ACTIVE	01/09/1997	2017
CAMC271336	NW	FAT 223	VAN ERT STEVEN J	CAMC271314	LODE	ACTIVE	01/09/1997	2017
CAMC271338	NW	FAT 225	VAN ERT STEVEN J	CAMC271314	LODE	ACTIVE	01/09/1997	2017
CAMC293553	NE	FAT 186	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293554	NE,NW	FAT 185	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE,NW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293555	NE	FAT 184	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293556	NE,NW	FAT 183	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE,NW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293557	NE,SE	FAT 182	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE,SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293558	NE,NW,SW,SE	FAT 181	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE,NW,SW,SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293559	SE	FAT 180	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293560	SW,SE	FAT 179	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW,SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293561	SE	FAT 178	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293562	SW,SE	FAT 177	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW,SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293563	SE	FAT 176	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293564	SW,SE	FAT 175	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW,SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293565	SE	FAT 174	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017

MTRS: 21 0160S 0390E 032

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC293566	SW,SE	FAT 173	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW,SE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC306252	SW	IN 23	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306254	SW	IN 25	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306270	SW	IN 41	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306271	NW,SW	IN 42	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306272	SW	IN 43	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306273	NW,SW	IN 44	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306280	NE,NW	IN 76	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/02/2012	2017
CAMC306281	NW	IN 77	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/02/2012	2017
CAMC306282	NW	IN 78	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/02/2012	2017
CAMC306283	NW	IN 79	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/02/2012	2017
CAMC306284	NW	IN 80	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/02/2012	2017
CAMC306285	NW	IN 81	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/02/2012	2017
CAMC306286	NW	IN 82	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/02/2012	2017
CAMC306411	NE	EX 4	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306412	NE	EX 5	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306413	NE	EX 6	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306560	NE	IN 71	COUSINS NOEL	CAMC306557	LODE	ACTIVE	01/10/2013	2017
CAMC306561	NE	IN 72	COUSINS NOEL	CAMC306557	LODE	ACTIVE	01/10/2013	2017
CAMC306562	NE	IN 73	COUSINS NOEL	CAMC306557	LODE	ACTIVE	01/10/2013	2017
CAMC306563	NE	IN 74	COUSINS NOEL	CAMC306557	LODE	ACTIVE	01/10/2013	2017
CAMC306564	NE	IN 75	COUSINS NOEL	CAMC306557	LODE	ACTIVE	01/10/2013	2017

MTRS: 21 0160S 0390E 033

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC270093	NW,SW	FAT 199	VAN ERT STEVEN J	CAMC270065	LODE	ACTIVE	08/22/1996	2017
CAMC293553	NW	FAT 186	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293555	NW	FAT 184	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293557	NW,SW	FAT 182	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NW,SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017

MTRS: 21 0160S 0390E 033

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC293559	SW	FAT 180	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293561	SW	FAT 178	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293563	SW	FAT 176	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293565	SW	FAT 174	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293569	SW	FAT 197	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293570	SW	FAT 195	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293571	SW	FAT 193	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC306411	NW	EX 4	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306412	NW	EX 5	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306413	NW	EX 6	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306429	SW,SE	EX 22	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306430	SE	EX 23	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306431	SW,SE	EX 24	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306432	SE	EX 25	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306433	SW,SE	EX 26	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306434	SE	EX 27	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306435	SW,SE	EX 28	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306436	SE	EX 29	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306437	NE,NW,SW,SE	EX 30	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306438	NE,SE	EX 31	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306439	NE,NW	EX 32	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306440	NE	EX 33	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306441	NE,NW	EX 34	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306442	NE	EX 35	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306443	NE,NW	EX 36	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306444	NE	EX 37	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306459	SE	EX 52	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017

MTRS: 21 0160S 0390E 033

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC306557	NW	IN 68	COUSINS NOEL	CAMC306557	LODE	ACTIVE	01/10/2013	2017
CAMC306558	NW	IN 69	COUSINS NOEL	CAMC306557	LODE	ACTIVE	01/10/2013	2017
CAMC306559	NW	IN 70	COUSINS NOEL	CAMC306557	LODE	ACTIVE	01/10/2013	2017
CAMC306560	NW	IN 71	COUSINS NOEL	CAMC306557	LODE	ACTIVE	01/10/2013	2017
CAMC312905	NE,NW	EOS 114	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/10/2016	2017
CAMC312907	NE	EOS 116	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/10/2016	2017
CAMC312909	NE	EOS 118	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/10/2016	2017
CAMC312911	NE	EOS 120	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/10/2016	2017
CAMC312913	NE	EOS 122	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/05/2016	2017
CAMC312922	NE	EOS 131	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/05/2016	2017
CAMC312923	NE	EOS 133	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/05/2016	2017
CAMC312924	NE	EOS 135	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/05/2016	2017
CAMC312925	NE,SE	EOS 137	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/05/2016	2017
CAMC312926	SE	EOS 139	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/05/2016	2017
CAMC312927	SE	EOS 141	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/05/2016	2017
CAMC312928	SE	EOS 143	SILVER STANDARD US HOLDINGS INC	CAMC312844	LODE	ACTIVE	03/05/2016	2017

MTRS: 21 0170S 0390E 003

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC264621	SW	MESA #3	VAN ERT STEVEN J	CAMC264621	LODE	ACTIVE	09/02/1994	2017
CAMC264622	SW,SE	MESA #21	VAN ERT STEVEN J	CAMC264621	LODE	ACTIVE	09/03/1994	2017

MTRS: 21 0170S 0390E 003

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC267107	SW	MESA #13	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267776	NE,NW	CM 29	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/03/1995	2017
CAMC267778	NW	CM 31	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/03/1995	2017
CAMC267780	SW	CM 33	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/03/1995	2017
CAMC267805	SE	CM 63	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/01/1995	2017
CAMC269062	NW	FAT 147	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269064	NW	FAT 149	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC280789	SW	CMP 1	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC292569	SE	SEA-3	COUSINS NOEL	CAMC292567	LODE	ACTIVE	03/20/2008	2017
	SE		VAN ERT STEVEN J	CAMC292567	LODE	ACTIVE	03/20/2008	2017
CAMC293571	NW	FAT 193	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293572	NW	FAT 191	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC306408	SW	EX 1	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306409	SW	EX 2	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306410	SW	EX 3	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306414	SW	EX 7	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306415	SW	EX 8	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306416	SW,SE	EX 9	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306417	SW	EX 10	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306418	SW,SE	EX 11	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306419	SW	EX 12	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306420	SW,SE	EX 13	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306421	NW,SW	EX 14	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306422	NE,NW,SW,SE	EX 15	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306423	NW	EX 16	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306424	NE,NW	EX 17	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306425	NW	EX 18	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306426	NE,NW	EX 19	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306427	NW	EX 20	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306428	NE,NW	EX 21	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306429	NW	EX 22	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306430	NE,NW	EX 23	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017

MTRS: 21 0170S 0390E 003

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC306445	SE	EX 38	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306446	SE	EX 39	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306447	SE	EX 40	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306448	SE	EX 41	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306449	SE	EX 42	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306450	SE	EX 43	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306451	NE,SE	EX 44	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306452	NE,SE	EX 45	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306453	NE	EX 46	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306454	NE	EX 47	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306455	NE	EX 48	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306456	NE	EX 49	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306457	NE	EX 50	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306458	NE	EX 51	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306459	NE	EX 52	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306460	NE	EX 53	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC308953	SW	SLIM 1	COUSINS NOEL	CAMC308953	LODE	ACTIVE	01/26/2014	2017
	SW		VAN ERT STEVEN J	CAMC308953	LODE	ACTIVE	01/26/2014	2017
CAMC308954	SW	SLIM 2	COUSINS NOEL	CAMC308953	LODE	ACTIVE	01/26/2014	2017
	SW		VAN ERT STEVEN J	CAMC308953	LODE	ACTIVE	01/26/2014	2017

MTRS: 21 0170S 0390E 004

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC267755	NE,NW	CM 1	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267756	NE	CM 2	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267757	NE,NW,SW,SE	CM 3	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267758	NE,SE	CM 4	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267759	SW,SE	CM 5	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267760	SE	CM 6	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267761	SW,SE	CM 7	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267762	SE	CM 8	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267763	SW,SE	CM 9	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267764	SE	CM 10	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017

MTRS: 21 0170S 0390E 004

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC267765	SW,SE	CM 11	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267766	SE	CM 12	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267767	SW,SE	CM 13	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC269062	NE	FAT 147	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269063	NE	FAT 148	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269064	NE	FAT 149	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269065	NE	FAT 150	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269066	NE,NW	FAT 151	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269067	NW	FAT 152	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269068	NE,NW	FAT 153	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269069	NW	FAT 154	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269070	NW	FAT 155	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269071	NW	FAT 156	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269072	NW,SW	FAT 157	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269073	SW	FAT 158	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269074	SW	FAT 159	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269075	SW	FAT 160	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269076	SW	FAT 161	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC280789	SE	CMP 1	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC280790	SE	CMP 2	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC280792	SE	CMP 4	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC280794	SE	CMP 6	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC293565	NE	FAT 174	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293566	NE,NW	FAT 173	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE,NW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293567	NE	FAT 172	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293568	NE,NW	FAT 171	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE,NW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293571	NE	FAT 193	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017
CAMC293572	NE	FAT 191	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/14/2008	2017
	NE		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/14/2008	2017

MTRS: 21 0170S 0390E 004

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC306243	SW	IN 14	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306244	SW	IN 15	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306251	NW,SW	IN 22	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306252	NW	IN 23	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306408	SE	EX 1	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306409	SE	EX 2	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306410	SE	EX 3	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC308953	SE	SLIM 1	COUSINS NOEL	CAMC308953	LODE	ACTIVE	01/26/2014	2017
	SE		VAN ERT STEVEN J	CAMC308953	LODE	ACTIVE	01/26/2014	2017

MTRS: 21 0170S 0390E 009

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC267098	NE,SE	MESA #4	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267100	SE	MESA #6	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267101	SE	MESA #7	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267102	SE	MESA #8	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267103	SE	MESA #9	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267104	SW,SE	MESA #10	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267105	NE,NW,SW,SE	MESA #11	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267106	NE,NW	MESA #12	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267767	NE,NW	CM 13	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267768	NE,NW	CM 14	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267769	NE,NW	CM 15	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267770	NE,NW	CM 16	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC267771	NE,NW,SW,SE	CM 17	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/02/1995	2017
CAMC269076	NW	FAT 161	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC269077	NW	FAT 162	VAN ERT STEVEN J	CAMC268916	LODE	ACTIVE	03/16/1996	2017
CAMC280789	NE	CMP 1	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC280790	NE	CMP 2	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC280791	NE,SE	CMP 3	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC280792	NE	CMP 4	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC280793	NE,SE	CMP 5	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017

MTRS: 21 0170S 0390E 009

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC280794	NE	CMP 6	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC280795	NE,SE	CMP 7	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC286720	SE	MP 8	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286721	SE	MP 9	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286722	SW,SE	MP 10	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286723	SE	MP 11	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286727	SW	MP 15	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286728	SW	MP 16	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286729	SW	MP 17	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC293573	NW	FAT 163	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/15/2008	2017
	NW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/15/2008	2017
CAMC293574	NW,SW	FAT 164	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/15/2008	2017
	NW,SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/15/2008	2017
CAMC293575	SW	FAT 165	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/15/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/15/2008	2017
CAMC293576	SW	FAT 166	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/15/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/15/2008	2017
CAMC293577	SW	FAT 168	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/15/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/15/2008	2017
CAMC293578	SW	FAT 167	COUSINS NOEL	CAMC293553	LODE	ACTIVE	10/15/2008	2017
	SW		VAN ERT STEVEN J	CAMC293553	LODE	ACTIVE	10/15/2008	2017
CAMC306243	NW	IN 14	COUSINS NOEL	CAMC306243	LODE	ACTIVE	12/03/2012	2017
CAMC306408	NE	EX 1	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017

MTRS: 21 0170S 0390E 010

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC264621	NW	MESA #3	VAN ERT STEVEN J	CAMC264621	LODE	ACTIVE	09/02/1994	2017
CAMC264623	NE,NW	MESA #23	VAN ERT STEVEN J	CAMC264621	LODE	ACTIVE	09/03/1994	2017
CAMC264624	NW	MESA #24	VAN ERT STEVEN J	CAMC264621	LODE	ACTIVE	09/03/1994	2017
CAMC264625	NW	MESA #26	VAN ERT STEVEN J	CAMC264621	LODE	ACTIVE	09/03/1994	2017
CAMC267098	NW,SW	MESA #4	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267099	NW	MESA #5	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267100	SW	MESA #6	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017

MTRS: 21 0170S 0390E 010

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
CAMC267107	NW	MESA #13	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267108	NE,NW	MESA #25	VAN ERT STEVEN J	CAMC267098	LODE	ACTIVE	09/01/1995	2017
CAMC267787	NE,NW	CM 40	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/03/1995	2017
CAMC267788	NE,NW	CM 42	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/03/1995	2017
CAMC267789	NE,NW,SW,SE	CM 44	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/03/1995	2017
CAMC267806	NE	CM 64	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/01/1995	2017
CAMC267808	NE	CM 66	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/01/1995	2017
CAMC267809	NE	CM 67	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/01/1995	2017
CAMC267810	NE	CM 68	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/01/1995	2017
CAMC267811	NE	CM 69	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/01/1995	2017
CAMC267812	NE	CM 70	VAN ERT STEVEN J	CAMC267755	LODE	ACTIVE	12/01/1995	2017
CAMC280789	NW	CMP 1	VAN ERT STEVEN J	CAMC280789	LODE	ACTIVE	12/19/2002	2017
CAMC286713	SW,SE	MP 1	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286714	SE	MP 2	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286715	SW,SE	MP 3	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286718	SW	MP 6	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286719	SW	MP 7	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286720	SW	MP 8	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC286721	SW	MP 9	COUSINS NOEL	CAMC286713	LODE	ACTIVE	09/22/2006	2017
CAMC292567	NE	SEA-1	COUSINS NOEL	CAMC292567	LODE	ACTIVE	03/20/2008	2017
	NE		VAN ERT STEVEN J	CAMC292567	LODE	ACTIVE	03/20/2008	2017
CAMC292568	NE	SEA-2	COUSINS NOEL	CAMC292567	LODE	ACTIVE	03/20/2008	2017
	NE		VAN ERT STEVEN J	CAMC292567	LODE	ACTIVE	03/20/2008	2017
CAMC292569	NE	SEA-3	COUSINS NOEL	CAMC292567	LODE	ACTIVE	03/20/2008	2017
	NE		VAN ERT STEVEN J	CAMC292567	LODE	ACTIVE	03/20/2008	2017
CAMC292570	NE	SEA-4	COUSINS NOEL	CAMC292567	LODE	ACTIVE	03/20/2008	2017
	NE		VAN ERT STEVEN J	CAMC292567	LODE	ACTIVE	03/20/2008	2017
CAMC292571	NE	SEA-5	COUSINS NOEL	CAMC292567	LODE	ACTIVE	03/20/2008	2017
	NE		VAN ERT STEVEN J	CAMC292567	LODE	ACTIVE	03/20/2008	2017
CAMC306408	NW	EX 1	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC306414	NW	EX 7	COUSINS NOEL	CAMC306408	LODE	ACTIVE	01/03/2013	2017
CAMC308954	NW	SLIM 2	COUSINS NOEL	CAMC308953	LODE	ACTIVE	01/26/2014	2017
	NW		VAN ERT STEVEN J	CAMC308953	LODE	ACTIVE	01/26/2014	2017
CAMC308955	SE	MP 4	COUSINS NOEL	CAMC308953	LODE	ACTIVE	01/26/2014	2017

MTRS: 21 0170S 0390E 010

Serial Number	Quad	Claim Name	Claimant	Lead File	Case Type	Status	Loc Date	Last Assmt
	SE		VAN ERT STEVEN J	CAMC308953	LODE	ACTIVE	01/26/2014	2017
CAMC308956	SW,SE	MP 5	COUSINS NOEL	CAMC308953	LODE	ACTIVE	01/26/2014	2017
	SW,SE		VAN ERT STEVEN J	CAMC308953	LODE	ACTIVE	01/26/2014	2017
CAMC308957	NE	MP 18	COUSINS NOEL	CAMC308953	LODE	ACTIVE	01/26/2014	2017
	NE		VAN ERT STEVEN J	CAMC308953	LODE	ACTIVE	01/26/2014	2017
CAMC308958	NE	MP 19	COUSINS NOEL	CAMC308953	LODE	ACTIVE	01/26/2014	2017
	NE		VAN ERT STEVEN J	CAMC308953	LODE	ACTIVE	01/26/2014	2017

UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
GEOGRAPHIC REPORT WITH LAND
Sorted by Serial Number

Serial Number: CACA 035093
Total Case Acres: 32,008.000

Casetype	Case Disp	21	0170S	0390E	Sect	Sur Typ	Sur Num	Suff	Subdivision	Act Pend
231106	AUTHORIZED				009	FF			POR SESW;	
					010	FF			POR S2;	

Serial Number: CACA 056495
Total Case Acres: 5.000

Casetype	Case Disp	21	0170S	0390E	Sect	Sur Typ	Sur Num	Suff	Subdivision	Act Pend
380910	PENDING				003	ALIQ			S2SW;	
					004	ALIQ			W2E2;	
					009	ALIQ			E2W2NE;	
					010	ALIQ			N2NW;	

Serial Number: CACA 057064
Total Case Acres: 1,337,904.000

Casetype	Case Disp	21	0160S	0390E	Sect	Sur Typ	Sur Num	Suff	Subdivision	Act Pend
231145	PENDING				032	ALL			ENTIRE SECTION	
					033	ALL			ENTIRE SECTION	

Serial Number: CACA 057064
Total Case Acres: 1,337,904.000

Casetype	Case Disp	21	0170S	0390E	Sect	Sur Typ	Sur Num	Suff	Subdivision	Act Pend
231145	PENDING				003	ALL			ENTIRE SECTION	
					004	ALL			ENTIRE SECTION	
					009	FF			WITHIN;	
					010	FF			WITHIN;	

APPENDIX 3

GEOLOGIC UNITS

press). Older parts of unit predate Tertiary basalt (unit Tb); younger parts postdate the basalt. Some deposits contain basalt clasts. Unit includes the fanglomerate of Slate Canyon and the fanglomerate of Bonham Canyon of Stone and others (2004), which contain ash beds dated as late Miocene (about 9 to 6 Ma) and middle Miocene (13.6±0.5 Ma), respectively (A.M. Sarna-Wojcicki, written commun., in Stone and others, 2004; Conrad, 1993). Includes the following subunit:

QTas **Silt beds (Quaternary or Tertiary)**—Weakly consolidated beds of grayish-white silt that interfinger with dissected deposits of alluvial gravel (unit QTa). Present only in a small area on west side of the Inyo Mountains; interpreted as lake deposits (Swanson, 1996). Local stratigraphic and structural relations indicate that the silt beds and the interfingering alluvium are younger than adjacent Tertiary fanglomerate (unit Tf) and basalt (unit Tb) (Swanson, 1996)

QTr **Rubble (Quaternary or Tertiary)**—Weakly consolidated deposit of unsorted, angular clasts of reddish-brown conglomerate and sandstone. Possibly the remnants of an ancient landslide deposit derived from nearby altered (jasperized) member C of the Conglomerate Mesa Formation (Ꞧcc)

Tb **Basalt (Tertiary)**—Basalt flows, dikes, and pyroclastic rocks. Flows and dikes consist of dark-gray basalt that typically contains small phenocrysts of olivine, plagioclase, and augite in an aphanitic groundmass. Some flows are amygdaloidal and vesicular. Pyroclastic rocks, most of which locally underlie the basalt flows, consist of brown, yellowish-brown, reddish-brown, and reddish-purple tuff, lapilli tuff, tuff-breccia, and agglomerate. Described in more detail by McAllister (1956), Hall and MacKevett (1962), and Stinson (1977). Probably early Pliocene and latest Miocene in age. K-Ar ages of two basalt flows in the map area are 5.4±0.2 and 4.3±0.5 Ma; K-Ar age of another flow just south of the area is 6.7±0.6 Ma (all K-Ar ages by Larsen, 1979)

Tf **Fanglomerate (Tertiary)**—Firmly consolidated deposits of locally derived gravel and sand that demonstrably underlie Tertiary basalt (unit Tb). Mapped only on west side of the Inyo Mountains, where the deposits typically have a distinctive grayish-yellow to yellowish-orange color. Maximum exposed thickness about 40 m (Swanson, 1996). Probably correlative with deposits in the lower part of unit QTa, and also with deposits of the Coso Formation that predate latest Miocene (~5.5 to 6 Ma) volcanic rocks in the Coso Range, 3 to 15 km south of the map area (Bacon and others, 1982)

INTRUSIVE ROCKS AND VEINS

q **Quartz veins (Cenozoic or Mesozoic)**—Veins cutting Mississippian rocks near Cerro Gordo Mine. Unit includes Castle Rock vein of Merriam (1963)

KJg **Leucocratic granite (Cretaceous or Jurassic)**—Light-colored, medium-grained biotite granite. Forms small masses in western part of map area

KJdi **Diorite (Cretaceous or Jurassic)**—Biotite-hornblende diorite spatially associated with leucocratic granite (KJg)

KJf **Younger felsite intrusions (Early Cretaceous or Late Jurassic)**—Light-colored, aphanitic to very fine grained intrusions, primarily dikes, composed of microcrystalline feldspar, quartz, and minor muscovite; locally spherulitic. Locally cuts dark-colored dikes (Jd). One dike in map area has a U-Pb (zircon) minimum age of about 140 Ma (Dunne and Walker, 1993; Stone and others, 2004)

Jd **Dark-colored dikes (Late Jurassic?)**—Dark-gray, greenish-gray, and reddish-brown, porphyritic dikes, probably of dioritic composition. Composed of 10 to 50 percent plagioclase, hornblende, and pyroxene phenocrysts mostly 1 to 3 mm long in a microcrystalline groundmass. Both phenocrysts and groundmass are altered. Dikes are mostly 1 to 5 m wide; a few are as much as 50 to 100 m wide. Undated in map area, but provisionally considered part of the regionally extensive Independence dike swarm of Late Jurassic age

Jdv **Deformed intrusions of variable composition (Late to Middle Jurassic?)**—Light-gray to

greenish-gray, aphanitic to medium-grained porphyritic intrusive masses of intermediate to mafic composition. May incorporate more than one suite of intrusions. Commonly deformed by boudinage, cleavage, and shearing (Swanson, 1996)

Jmh **Mafic hypabyssal intrusion (Late to Middle Jurassic?)**—Large, discordant mass intrusive into lower and middle parts of the Inyo Mountains Volcanic Complex

Jad **Altered diorite (Late to Middle Jurassic?)**—Variably sheared greenish-gray to reddish-brown, medium- to very fine grained hornblende(?)-biotite diorite and quartz diorite. Moderately to intensely altered to mixtures of white mica, chlorite, iron oxides, and hydroxides

Jh **Hunter Mountain Quartz Monzonite (Middle to Early Jurassic)**—Medium- to coarse-grained quartz monzonite. Typically contains 25 to 45 percent orthoclase, 35 to 55 percent plagioclase, 10 to 20 percent quartz, 3 to 20 percent mafic minerals (primarily hornblende), and accessory magnetite and sphene (McAllister, 1956). Part of composite Hunter Mountain Batholith, which Dunne and others (1978) reported to have an age range of about 167 to 185 Ma

Jf **Older felsite intrusions (Jurassic?)**—Light-colored, aphanitic to fine-grained felsite. Composed of microcrystalline to fine-grained feldspar and rare to abundant quartz; plagioclase phenocrysts 0.5 to 3 mm long are present locally. Primarily forms sills as wide as 230 m, but also forms discordant plutons

Ji **Altered fine-grained intrusions (Jurassic?)**—Brown to brownish-orange, highly altered and weathered intrusive rocks. Aphanitic to fine-grained; composed of sericitized plagioclase, altered pyroxene or hornblende, quartz, and abundant opaque minerals; contains phenocrysts less than 2 mm in diameter. Original composition probably dioritic

Jmp **Hornblende monzodiorite to monzonite porphyry (Jurassic?)**—Quartz-poor porphyritic rocks that form discordant intrusions near the Cerro Gordo Mine. Composed of about 80 percent phenocrysts 1 to 10 mm long in a dark, fine-grained groundmass of potassium feldspar, hornblende, minor quartz, and alteration minerals. Phenocrysts are dominantly plagioclase, less abundant hornblende, and rare pink potassium feldspar. Overall composition is 50 to 70 percent plagioclase, 10 to 35 percent potassium feldspar, 15 to 25 percent hornblende, and less than 5 percent quartz (Stone and others, 2004)

SEDIMENTARY AND VOLCANIC ROCKS

Jiv **Inyo Mountains Volcanic Complex (Jurassic)**—Lithologically heterogeneous volcanic and volcanogenic sedimentary rocks (Merriam, 1963; Dunne and Walker, 1993; Dunne and others, 1998; Stone and others, 2004). Undivided where exposed in narrow fault slivers. Elsewhere, divided into the following subunits:

Jivu **Upper part (Late and Middle Jurassic)**—Volcanogenic sandstone, siltstone, and conglomerate; rare calcareous strata; and welded tuff and lava flows. Thickness about 400 m with top not exposed

Jivm **Middle part (Middle Jurassic)**—Silicic crystal-lithic welded ash-flow tuff; less abundant andesite and rhyolite lava flows; and subordinate volcanogenic sandstone and conglomerate. Thickness about 300 m

Jivl **Lower part (Middle or Early Jurassic?)**—Volcanogenic sandstone, conglomerate and breccia in laterally variable proportions; less abundant basaltic lava flows; and rare felsic tuff. Stratigraphic relations at base of unit generally obscured along faulted contact with the Union Wash Formation. Thickness about 450 m. Unit includes:

cg **Basal conglomeratic unit**—Conglomeratic rocks as much as 80 m thick containing mostly limestone clasts in the lower part and mostly volcanic-rock clasts in the upper part

Union Wash Formation (Middle? and Early Triassic)—Fine-grained marine sedimentary rocks that include shale, siltstone, sandstone, and limestone (Stone and others, 1991,

2004). Equivalent to unnamed Triassic strata of Merriam (1963) and Stone and others (1989). Divided into the following members:

Upper member (Middle? and Early Triassic)—Divided into the following subunits:

Ŧuu4 **Subunit 4**—Consists primarily of brown- to yellowish-brown, thin-bedded quartzose siltstone and shale. Upper part contains limestone and dolomite. Thickness 200 to 300 m. Unit includes:

ls **Limestone**—Medium- to dark-gray, micritic and locally oolitic limestone. Forms a bed 4 to 20 m thick that locally is structurally repeated by folding and faulting

Ŧuu3 **Subunit 3**—Dark-gray, ledge-forming micritic limestone. Forms planar beds 1 to 5 cm thick separated by thin partings of light-brown siltstone or mudstone. Thickness 75 to 95 m

Ŧuu2 **Subunit 2**—Gray, purplish-gray, brownish-gray, and brown quartzose siltstone to very fine grained sandstone and light- to medium-gray limestone; basal 10 m consists of yellow shale. Thickness 80 to 100 m

Ŧuu1 **Subunit 1**—Dark-gray micritic limestone; forms massive ledge. Average thickness about 10 m

Ŧum **Middle member (Early Triassic)**—Yellow shale and medium-gray, thin-bedded micritic limestone. Most parts of member consist primarily of shale and widely spaced limestone interbeds; includes a few limestone-dominated intervals as much as 25 m thick. Uppermost 40 to 50 m is a marker zone of bright yellowish-brown shale. Thickness 200 to 300 m

Ŧul **Lower member (Early Triassic)**—Gray to brown, silty to sandy limestone and calcareous siltstone to fine-grained sandstone. Characterized by thin, planar to wavy bedding, distinctive nodular texture, and local presence of minute black gastropod casts. Forms resistant crags and hogbacks. Thickness generally 30 to 40 m. Locally includes:

Ŧuls **Basal sandstone unit**—Yellowish-gray, fine-grained, calcareous sandstone and siltstone, and subordinate dark-gray mudstone. Maximum thickness about 40 m

Owens Valley Group (Early Triassic to Cisuralian)—Lithologically diverse marine and nonmarine sedimentary rocks (Merriam and Hall, 1957; Merriam, 1963; Stone and Stevens, 1987; Stone and others, 1989, 2000, 2004). In map area, consists of the following units:

Conglomerate Mesa Formation (Early Triassic and Lopingian)—Conglomerate, sandstone, and minor limestone (Stone and Stevens, 1987; Stone and others, 1989, 2000, 2004). In type area, 1 km north of the map area, formation consists of three members (C, B, and A in descending order); Stone and Stevens, 1987; Stone and others, 2000). In map area, only members C and B are recognized:

Ŧcc **Member C (Early Triassic)**—Gray to brown, thick-bedded pebble and cobble conglomerate and subordinate fine- to coarse-grained sandstone. Conglomerate clasts composed of limestone, quartzite, gray chert, and siltstone. Probably nonmarine. Age based on conformable contact with overlying Union Wash Formation (Stone and others, 2000). Thickness 10 to 150 m

Pcb **Member B (Lopingian)**—Light-gray, thick-bedded sandy and pebbly limestone. Forms lenticular exposures along the northern and eastern base of Conglomerate Mesa. Shallow-water marine. Age based on ammonoids, brachiopods, and conodonts in type area (Stone and others, 2000). Maximum thickness in map area about 10 m

ŦPs **Sandstone and chert-pebble conglomerate (Early Triassic or Permian)**—Unit locally present below rocks mapped as member C of the Conglomerate Mesa Formation (Ŧcc) and above rocks mapped as unit 12b of the sedimentary rocks of Santa Rosa Flat (Ps12b). Probably nonmarine. Maximum thickness about 30 m

Psu **Sedimentary rocks of Santa Rosa Flat (Guadalupian? and Cisuralian)**—Heterogeneous sequence composed of sandstone, siltstone, limestone, limestone conglomerate, and shale (Magginetti and others, 1988; Stone and others, 1989). Present in eastern part of map area. Includes some rocks previously mapped as Bird

Spring(?) Formation by McAllister (1956). Mapped as an undivided unit (Psu) in a few small areas that were not studied in detail. Elsewhere, divided into the following subunits:

Unit 12 (Guadalupian or Cisuralian)—Composed primarily of fine-grained clastic rocks. Probably nonmarine. Thickness 120 to 300 m. Divided into the following subunits:

Ps12b **Unit 12b**—Yellow shale; yellowish-brown to brown, calcareous siltstone and fine-grained sandstone; minor gray to bluish-gray, pebbly limestone; and rare brown-weathering, chert-pebble conglomerate. Pebbly limestone is lithologically similar to rocks of the locally underlying limestone conglomerate unit (Psc), but limestone clasts are generally smaller. Commonly overlies unit 11 (Ps11); locally overlies unit 12a (Ps12a)

Ps12a **Unit 12a**—Maroon and greenish-gray shale

Ps11 **Unit 11 (Guadalupian or Cisuralian)**—Brown, yellowish-brown, and reddish-gray, fine- to coarse-grained sandstone, siltstone, and subordinate conglomerate. Probably nonmarine. Thickness 200 to 250 m

Psc **Limestone-clast conglomerate (Guadalupian or Cisuralian)**—Medium- to dark-gray, massive conglomerate composed of poorly sorted, tightly to loosely packed, angular to subangular limestone clasts 1 to 20 cm in diameter and rare angular chert pebbles in a matrix of fine-grained, silty limestone. Probably nonmarine. Locally overlies unit 10 (Ps10). Maximum thickness about 60 m

Ps10 **Unit 10 (Guadalupian? and Cisuralian)**—Medium-gray micritic to bioclastic limestone in which marine fossils are locally abundant. Shallow-water marine. Fusulinids suggest a Roadian or Leonardian age (Stevens and Stone, 2009c); brachiopods suggest a Leonardian or younger age (Hall and MacKevett, 1962). Unit also contains bryozoa, gastropods, and corals. Maximum thickness about 40 m

Ps9 **Unit 9 (Cisuralian)**—In southern part of map area, composed primarily of yellow shale. In northern part of area, composed of gray shale, ochre to brown calcareous siltstone to fine-grained sandstone, and minor silty, bioclastic limestone in which fusulinids are locally abundant and corals are sparse. Probably mostly if not entirely marine. Fusulinids indicate a Leonardian age (Magginetti and others, 1988; Stevens and Stone, 2009c). Unit thickness 75 to 300 m. In northern part of area, includes the following subunit:

Ps9s **Predominantly siltstone and fine-grained sandstone**

Graded limestone unit (Cisuralian)—Thick, stratigraphically and structurally complex unit primarily characterized by medium- to dark-gray, bioclastic and conglomeratic limestone in beds that range from 5 cm to more than 1 m thick. Graded beds, which suggest deep-water deposition by turbidity currents, predominate. Limestone, which contains abundant echinodermal debris, fusulinids, shell fragments, coral fragments, and bryozoans, is interbedded with variable proportions of maroon, brown, ochre, and gray calcareous mudstone and siltstone. Fusulinids suggest a Leonardian to late Wolfcampian age (Stone, 1984; Stevens and Stone, 2009a). Previously considered part of unit 8 (Stone and others, 1989). Divided into the following subunits:

Psg3 **Subunit 3**—Exposed northeast of Conglomerate Mesa. Predominantly thin-bedded, gray, calcareous mudstone and ochre to brown, calcareous siltstone and fine-grained calcareous sandstone; minor dark-gray, mostly fine grained, graded limestone beds generally less than 30 cm thick. Fusulinids and other bioclasts are present in the coarsest limestone beds. Fusulinids suggest a Leonardian to late Wolfcampian age (Stone, 1984). Depositionally overlies unit 7 (Ps7) on a sharp, but concordant, contact; gradationally overlain by unit 9 (Ps9). Unit thickness uncertain because of faulting, but probably about 425 m

Subunit 2—Exposed southeast of Conglomerate Mesa. Structurally overlies unit 6 (Ps6) and subunit 1 of the graded limestone unit (Psg1) on the Malpais Fault;

structurally overlain by unit 9 (Ps9) on another fault. Stratigraphic relation to subunits 1 and 3 (Psg1 and Psg3) is uncertain. Fusulinids suggest a Leonardian age (Stone, 1984). Further divided into the following subunits, which form an apparently concordant depositional sequence estimated to be as much as 2,400 m thick:

Psg2d **Subunit 2d**—Ochre to maroon calcareous mudstone, siltstone, and fine-grained sandstone, interbedded with equally to slightly less abundant graded beds of dark-gray limestone. Fusulinids are present locally in the limestone. Gradationally overlies subunit 2c (Psg2c). Maximum exposed thickness about 600 m

Psg2c **Subunit 2c**—Dark-gray, graded limestone beds. Beds are thick and coarse grained (in part conglomeratic) in lower part of subunit, becoming thinner and finer grained up section. Crinoid debris and intraclasts are abundant; fusulinids and corals are present locally. Gradationally overlies subunit 2b (Psg2b). Estimated thickness about 600 m

Psg2b **Subunit 2b**—Dark-gray, thick-bedded to massive, coarse-grained to conglomeratic limestone; includes some graded beds. Sharply overlies subunit 2a (Psg2a). Estimated thickness about 450 m

Psg2a **Subunit 2a**—Dark-gray, thick, graded bioclastic limestone beds that locally contain fusulinids. Base faulted. Estimated exposed thickness about 750 m

Psg1 **Subunit 1**—Exposed south and southwest of Conglomerate Mesa. Predominantly dark-gray, graded limestone beds typically between 10 and 75 cm thick. Limestone beds are richly bioclastic and commonly contain abundant fusulinids. Matrix-supported limestone-clast conglomerate beds interpreted as submarine debris-flow deposits locally are as much as 7 m thick. Maroon to ochre calcareous siltstone and mudstone are present in varying amounts and are most abundant in the lower part of the subunit. Basal beds of subunit depositionally overlie rocks questionably assigned to unit 6 (Ps6); uppermost beds are stratigraphically overlain by unit 9 (Ps9). Fusulinids suggest that most of unit probably is of late Wolfcampian age; uppermost part is Leonardian (Stone, 1984). Subunit is at least 500 m thick and may be in excess of 1,000 m thick, but disruption by faults precludes an accurate estimate of thickness

Ps8 **Unit 8 (Cisuralian)**—Medium- to dark-gray, fossiliferous limestone, interbedded with subordinate grayish-orange to ochre calcareous siltstone and pink shale. Limestone locally contains abundant fusulinids and sparse corals. Shallow-water marine. Fusulinids suggest a Leonardian age (Magginetti and others, 1988; Stevens and Stone, 2009c). Maximum thickness about 30 m. Excludes most of the rocks previously assigned to unit 8 of Stone and others (1989), which included rocks herein assigned to the graded limestone unit

Ps7 **Unit 7 (Cisuralian)**—Composed primarily of light-gray, massive to thick-bedded, echinodermal limestone that locally contains diverse marine fossils including algae, sponges, fusulinids, brachiopods, bryozoans, corals, and probable hydrozoans (Rigby and others, 2004). Upper part is locally composed of dark-gray limestone that contains abundant brachiopods and is interbedded with tan to pink shale; lower part is locally composed of interbedded limestone and yellowish-brown siltstone. Shallow-water marine. Fusulinids indicate a late Wolfcampian age (Magginetti and others, 1988; Stevens and Stone, 2009c). Thickness 20 to 100 m

Ps6 **Unit 6 (Cisuralian)**—Brown to yellowish-brown, thin- to thick-bedded, very fine to fine-grained sandstone, calcareous sandstone, and siltstone; and medium- to dark-gray, thin- to thick-bedded bioclastic and conglomeratic limestone in which fusulinids and other marine fossils are abundant. Ammonoids are present locally. Several marker beds of bioclastic and conglomeratic limestone (blue line symbol) are mapped; these beds exhibit graded bedding and other features that indicate deep-water deposition by turbidity currents. Fusulinids indicate a late Wolfcampian age (Magginetti and others, 1988). Thickness about 500 m

Unit 5 (Cisuralian)—Dark-gray micritic limestone and subordinate brown to yellowish-brown siltstone and pink shale. Thickness about 200 m. Divided into the

following subunits:

Ps5l **Predominantly limestone**

Ps5s **Predominantly siltstone and shale**

Ps4 **Unit 4 (Cisuralian)**—Brown to yellowish-brown sandstone, calcareous sandstone, siltstone, and shale; and medium- to dark-gray, thin- to thick-bedded bioclastic and conglomeratic limestone (including marker beds shown by blue line symbol). Graded bedding and Bouma sequences indicate deep-water deposition by turbidity currents. Fusulinids, corals, and other marine fossils are abundant in limestone; the fusulinids indicate a middle Wolfcampian age (Magginetti and others, 1988). Ammonoids are present locally (Magginetti, 1983). Thickness about 600 m. Unit includes:

lcg **Limestone conglomerate**—A thick bed of pink, matrix-supported limestone conglomerate interpreted as a submarine debris-flow deposit. Contains fusulinids and corals

Ps3 **Unit 3 (Cisuralian)**—A single thick, light- to medium-gray bed that grades from bioclastic limestone and limestone conglomerate at the base to fine-grained limestone at the top. Lower part contains abundant fusulinids and scattered coral fragments. About 20 m thick in most places. Fusulinids indicate a middle Wolfcampian age (Magginetti and others, 1988)

Ps2 **Unit 2 (Cisuralian)**—Upper one-third consists of light-gray calcareous siltstone, silty limestone, and, near the top, a few beds of dark-gray calcarenitic limestone; lower two-thirds consists of brown, thick-bedded, very fine grained sandstone and siltstone that forms beds 40 cm to 1 m thick. Calcareous rocks in upper part contain graded bedding and Bouma sequences that indicate deep-water deposition by turbidity currents. Thickness 150 to 250 m. Possibly equivalent to basal clastic unit of the deep-water marine Darwin Canyon Formation (Stone and others, 1987) in Darwin Canyon, 20 km southeast of map area

Ps1 **Unit 1 (Cisuralian)**—Yellowish-brown to brown, thin-bedded calcareous siltstone and shale; subordinate medium- to dark-gray, thin- to thick-bedded bioclastic and conglomeratic limestone. Graded bedding and Bouma sequences indicate deep-water deposition by turbidity currents. Middle Wolfcampian fusulinids and corals locally present in limestone (Magginetti and others, 1988); one bed contains reworked Pennsylvanian fusulinids and conodonts. Ammonoids are present locally. Maximum exposed thickness about 380 m; base covered. Possibly equivalent to the Osborne Canyon Formation (Stone and others, 1987) in Darwin Canyon, 20 km southeast of map area

Pl **Lone Pine Formation (Cisuralian)**—Medium- to dark-gray and yellowish-gray, thin-bedded to laminated calcareous and dolomitic mudstone; thin-bedded calcareous siltstone and very fine to fine-grained sandstone; and scattered thicker beds (20 to 80 cm) of micritic limestone and dolomite (Stone and Stevens, 1987; Swanson, 1996; Stone and others, 2000, 2004; Stevens and others, 2001). Deep-water marine. Present in western part of map area, where maximum exposed thickness is about 1,200 m (Swanson, 1996). Locally includes:

Pll **Limestone**—Medium- to dark-gray, mostly thin-bedded limestone similar to rocks in upper part of Keeler Canyon Formation (PIPku). Thickness about 30 m

PIPa **Argillite and hornfels (Cisuralian and Pennsylvanian?)**—Reddish-brown-weathering, fine-grained, thinly layered argillite and calc-silicate hornfels; minor limestone and marble are present locally. Stratigraphically equivalent to lower part of the Lone Pine Formation (Pl) and upper part of the Keeler Canyon Formation (PIPku) on lower west slope of the Inyo Mountains where these units were intruded and metamorphosed by abundant felsite sills (unit Jf)

Keeler Canyon Formation (Cisuralian to Early Pennsylvanian)—Thick unit primarily composed of medium- to dark-gray, evenly bedded limestone interpreted to have been deposited as turbidites (Merriam, 1963; Werner, 1979; Swanson, 1996; Stevens and others, 2001; Stone and others, 1989, 2004). Divided into the following subunits:

PIPku **Upper part (Cisuralian to Middle Pennsylvanian)**—Medium- to dark-gray, evenly bedded, bioclastic limestone and silty to sandy limestone; tan-weathering calcareous siltstone; and gray, tan, and pink calcareous mudstone. Limestone is characterized by graded bedding and other features indicating deep-water deposition by turbidity currents. Thickness as much as 1,260 m. Includes Salt Tram and Cerro Gordo Spring members of Stevens and others (2001), which are dated as Cisuralian to Middle Pennsylvanian based on fusulinids and conodonts. In the northeastern part of the map area, unit includes some rocks previously mapped as part of the Bird Spring(?) Formation by McAllister (1956). In the Santa Rosa Hills, unit consists of rocks previously assigned to the Osborne Canyon Formation by Magginetti and others (1988) and Stone and others (1989). These rocks, which are older than the typical Osborne Canyon Formation, consist of the following units:

PIPkuf **Fine-grained upper unit (Cisuralian and Late Pennsylvanian)**—Predominantly silty to fine-grained sandy limestone and calcareous siltstone to fine-grained sandstone. Minor coarse-grained, bioclastic limestone forms graded beds that indicate deposition by turbidity currents. Rocks near top of unit contain early Cisuralian conodonts (S.M. Ritter, written commun., 2007); rocks near base contain fusulinids considered earliest Permian in age by Magginetti and others (1988), but more recently interpreted as latest Pennsylvanian (Stevens and others, 2001; Stevens and Stone, 2007). Maximum exposed thickness about 250 m; top covered by Quaternary alluvium

IPkuc **Coarse-grained lower unit (Late and Middle? Pennsylvanian)**—Thick-bedded to massive, echinodermal and conglomeratic limestone. Contact with the underlying Tihvipah Member (IPkt) is sharp and probably disconformable. Thickness about 20 to 50 m

IPkt **Tihvipah Member (Middle and Early Pennsylvanian)**—Medium- to dark-gray, thin- to thick-bedded, cherty micritic limestone, silty limestone, and tan-weathering calcareous siltstone. Limestone typically contains spherical to subspherical nodules ("golf balls") of dark-gray chert (Merriam, 1963; Stevens and others, 2001). Includes rare bioclastic beds interpreted as debris-flow deposits that suggest a relatively deep water sedimentary environment. North of Conglomerate Mesa, member contains ammonoids (advanced *Proshumardites* or primitive *Agathiceras*) of probable Middle Pennsylvanian age (B.F. Glenister, written commun., 1975). In the Santa Rosa Hills, the lower part of member (below the lowest "golf-ball" beds) contains brachiopods identified as *Hustedia miseri* Mather of Early Pennsylvanian age (M.A. Wilson, written commun., 1984). In most parts of the map area, unit has a maximum thickness of about 30 m and overlies the Rest Spring Shale (Mr) on the Morning Star Thrust Fault. A depositional contact with the Rest Spring Shale, along which limestone and argillite are interbedded, is locally preserved in the Fishhook hills (lower plate of Fishhook Thrust Fault). In the Santa Rosa Hills, unit is about 60 m thick, conformably overlies the Indian Springs Formation (Mi), and locally includes 10 m of brown- to orange-weathering siltstone at or near the top

Mr **Rest Spring Shale (Late Mississippian)**—Dark-brown to black shale (Merriam, 1963; Stone and others, 1989, 2004). Probably deep-water marine. Locally altered to argillite or hornfels; sheared in places. Contains Late Mississippian (Chesterian) ammonoids northwest of Cerro Gordo Mine (Gordon, 1964; Titus, 2000). In addition, a sample within 10 m of the top of the formation in the Fishhook hills contains brachiopods identified as *Eolissochonetes*? aff. *E*? *pseudoliratus* (Easton) of Late Mississippian age (J.T. Dutro, Jr., written commun., 1986). Thickness 150 to 350 m

Mi **Indian Springs Formation (Late Mississippian)**—Brown-weathering, fine-grained, plane-laminated and cross-laminated quartzite, siltstone, and shale; rare light- to medium-gray, fine-grained limestone (Dunne and others, 1981). Also includes minor phosphate-pebble conglomerate (Miller, 1989), some of which Stone and others (1989) previously considered to be in the lowermost part of the Tihvipah Limestone but which we herein assign to the uppermost part of the Indian Springs Formation. Shallow-

water marine. Contains brachiopods identified as *Quadratia* cf. *Q. hirsutiformis* (Walcott) and "*Avonia*" *subsulcata* (Girty)? of Late Mississippian age (M. Gordon, Jr., and T.W. Henry, written commun., 1984). Maximum thickness about 30 m. Contact with the underlying Santa Rosa Hills Limestone (Msr) is sharp and probably disconformable (Miller, 1989)

Mmt **Mexican Spring Formation and Tin Mountain Limestone, undivided (Late and Early Mississippian)**—Structurally complex fault blocks of very fine grained quartzite (Mexican Spring Formation) and subordinate medium- to dark-gray limestone (Tin Mountain Limestone)

Mm **Mexican Spring Formation (Late Mississippian)**—Composed primarily of light-gray, brown-weathering, calcareous quartzose siltstone to very fine grained sandstone (Stevens and others, 1996; Stone and others, 2004). Upper part locally consists of light-gray, very fine grained siltstone. In Fishhook hills, includes a few graded limestone beds interpreted as turbidites (Klingman, 1987). Unit was previously mapped as siltstone member of the Perdido Formation (Stone and others, 1989). Probably deep-water marine. Thickness 40 to 100 m

Msrs **Santa Rosa Hills Limestone and Stone Canyon Limestone, undivided (Late and Early Mississippian)**—Structurally complex limestone outcrops near southeast corner of map area, where detailed mapping has not been conducted

Msr **Santa Rosa Hills Limestone (Late and Early Mississippian)**—Light- to very light gray, thick-bedded, fine- to coarse-grained echinodermal limestone (Dunne and others, 1981; Stone and others, 1989). Colonial corals abundant. Contains sparse nodular gray chert. Shallow-water marine. Thickness 80 to 100 m

Mlr **Leaning Rock Formation (Early Mississippian)**—Dark-gray, thin- to medium-bedded limestone; black, spiculiferous chert; and minor bioclastic beds interpreted as turbidites and debris-flow deposits (Klingman, 1987; Stevens and others, 1996). Deep-water marine. Present only in the Fishhook hills, where exposed thickness is about 30 m and the base is faulted. Previously mapped as limestone member of the Perdido Formation (Stone and others, 1989)

Msc **Stone Canyon Limestone (Early Mississippian)**—Medium- to dark-gray, thin- to medium-bedded, fine-grained limestone, interbedded with abundant brown-weathering siliceous limestone and chert (Stevens and others, 1996). Upper 150 m of unit contains minor echinodermal limestone and locally contains brachiopods, gastropods, and corals (Klingman, 1987). Lower part contains rare graded limestone beds interpreted as turbidites and a pebbly calcareous mudstone bed interpreted as a debris-flow deposit (Klingman, 1987). Chert is particularly abundant in the basal 25 m. Relatively deep water marine. Thickness 450 to 530 m. Previously mapped as limestone member of the Perdido Formation (Stone and others, 1989)

Mt **Tin Mountain Limestone (Early Mississippian)**—Medium- to dark-gray or dark-bluish-gray, thin- to medium-bedded mostly fine grained limestone that locally contains gray to black chert lenses and nodules (Merriam, 1963; Stone and others, 1989, 2004). Some beds contain abundant coarse echinoderm debris. Probably shallow-water marine. Thickness 25 to 180 m

Dl **Lost Burro Formation (Late and Middle Devonian)**—Composed primarily of light- to dark-gray, thick-bedded, fine-grained limestone and marble (Merriam, 1963; Stone and others, 1989, 2004). Commonly forms steep slopes and cliffs. Thick beds typically display fine planar lamination defined by contrasting shades of gray. Characterized by locally abundant stromatoporoids and branching corals (Merriam, 1963). Uppermost few meters locally consist of vitreous light-gray quartzite. Lower part of formation includes variable amounts of light-gray dolomite and light-gray quartzite. Lower contact placed at base of a transitional zone about 30 m thick in which medium-gray limestone is interbedded with light-gray laminated dolomite similar to Hidden Valley Dolomite. Shallow-water marine. Thickness 550 to 700 m

DSh **Hidden Valley Dolomite (Middle? Devonian to early Silurian)**—Very light gray to light-

gray, massive, saccharoidal dolomite (Merriam, 1963; Stone and others, 2004). Typically forms irregular, ledgy slopes. Upper part of formation locally contains a discontinuous zone of sandy dolomite and quartzite. Shallow-water marine. Thickness 450 to 580 m

SOes **Ely Springs Dolomite (early Silurian and Late Ordovician)**—Medium- to dark-gray, thick-bedded dolomite characterized by irregular nodules and lenses of dark-gray chert as much as 15 cm long and aligned parallel to bedding (Merriam, 1963; Stone and others, 2004). Dolomite commonly has irregular mottled texture, possibly resulting from bioturbation; locally contains abundant sand-size fossil debris. Shallow-water marine. Thickness 180 to 250 m

Oe **Eureka Quartzite (Middle Ordovician)**—Light-tan to light-gray, vitreous, fine- to medium-grained quartzite (Merriam, 1963; Stone and others, 2004). Present only at north edge of map area; base not exposed

APPENDIX 4

DUPLICATE ASSAY RESULTS PROVIDED BY PROPONENT

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PROPRIETARY/CONFIDENTIAL INFORMATION

RECORDS CONTAINED HEREIN ARE PROPRIETARY/CONFIDENTIAL INFORMATION AND MUST BE SAFEGUARDED FROM UNAUTHORIZED DISCLOSURE

PROPRIETARY/CONFIDENTIAL INFORMATION

COVER MUST BE ATTACHED TO THE RECORD AT ALL TIMES WHEN THE RECORD IS REMOVED FROM THE FILES.

SEE REVERSE FOR PENALTIES FOR UNAUTHORIZED DISCLOSURE
Form 1273-2 (October 1984)

TITLE 18 -- CRIMES AND CRIMINAL PROCEDURE

§ 1905. Disclosure of confidential information generally

Whoever, being an officer or employee of the United States or of any department or agency thereof, or agent of the Department of Justice as defined in the Antitrust Civil Process Act (15 U.S.C. 1311-1314), publishes, divulges, discloses, or makes known in any manner or to any extent not authorized by law any information coming to him in the course of his employment or official duties or by reason of any examination or investigation made by, or return, report or record made to or filed with, such department or agency or officer or employee thereof, which information concerns or relates to the trade secrets, processes, operations, style of work, or apparatus, or to the identity, confidential statistical data, amount or source of any income, profits, losses, or expenditures of any person, firm, partnership, corporation, or association; or permits any income return or copy thereof or any book containing any abstract or particulars thereof to be seen or examined by any person except as provided by law; shall be fined not more than $1,000, or imprisoned not more than one year, or both; and shall be removed from office or employment.

(June 25, 1948, ch. 645, 62 Stat. 791; Sept. 12, 1980, Pub. L. 96-349 § 7(b), 94 Stat. 1158.)

ASSAY ID	FIELD ID	E_Nad27z11N	N_Nad27z11N	Elevation	Au (ppm)	Ag (ppm)
S167008	CM292SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167024	SSR002	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167015	SSR001	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167017	SSR003	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167005	SV68SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167023	CM91SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167010	SV69SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167019	RA19SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167018	RA16SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167014	CM440SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167021	CM53SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167020	RA003SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167013	SV51SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167022	CM442SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167009	EZ17SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167011	EZ16SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
S167016	DF002SSR	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Assay values provided by Silver Standard U.S. Holdings Inc., May 1, 2017. A map of general sample locations, also prepared by Silver Standard U.S. Holdings Inc., is provided on next page. Note that sample S167015 is not within the project area.

APPENDIX 5

ASSAY REPORT FOR SAMPLES COLLECTED MAY 15-16, 2017

JOB NUMBER.: CAD002
LAB ID: CAD17-002
July 05, 2017
PROJECT: PERDITO

CALIFORNIA STATE OFFICE-BLM
ATTN: Michael Smith
2800 Cottage Way, Suite W1618
Sacramento CA 95825
USA

FROM: BLM-CM-1 (5136021)
TO: BLM-CM-6 (5136026)

CERTIFICATE OF ANALYSIS
Final Report

Analysis Of 6 Drill Cuttingsamples

The following analytical packages were requested.
Please see our current fee schedule for elements and detection limits

ANALYSIS BY SKYLINE LABORATORIES / TUCSON

FA-01-50g	Au Fire Assay - AAS (geochem) 5-3,000 ppb, 50g
FA-03 50g	Au, Ag Fire Assay - Gravimetric Assay (0.03-1,000 g/Mt)
SP-19	Sample Weights

ASSAYER EMERITUS
52700
MICHAEL T.
JACOBSON
ARIZONA, U.S.A.

CERTIFIED BY : Michael Jacobson

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Arizona Assayer Emeritus No. 9425
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SKYLINE ASSAYERS & LABORATORIES

Client:	California State Office-BLM	ANALYSIS CERTIFICATE
Project:	PERDITO	**CAD17-002**
Sample type(s):	Drill Cutting	05-Jul-17
Submitted by:	Michael Smith	

RESULTS

	Analyte Symbol	Wt	Au	Au	Ag
	Unit Symbol	Kg	ppb	ppm	ppm
	Limit	0.01	5	0.03	3
	Package Code	SP-19	FA-01-50g	FA-03 50g	FA-03 50g
1	BLM-CM-1 (5136021)	3.13	188	0.20	< 3
2	BLM-CM-2 (5136022)	0.96	< 5	< 0.03	< 3
3	BLM-CM-3 (5136023)	1.01	28	0.06	< 3
4	BLM-CM-4 (5136024)	1.03	27	0.06	< 3
5	BLM-CM-5 (5136025)	3.55	20	0.04	< 3
6	BLM-CM-6 (5136026)	3.56	> 3000	4.20	4

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SKYLINE ASSAYERS & LABORATORIES

Client:	California State Office-BLM	ANALYSIS CERTIFICATE
Project:	PERDITO	**CAD17-002**
Sample type(s):	Drill Cutting	05-Jul-17
Submitted by:	Michael Smith	

QUALITY CONTROL

Analyte Symbol	Au	Au	Ag
Unit Symbol	ppb	ppm	ppm
Limit	5	0.03	3
Package Code	FA-01-50g	FA-03 50g	FA-03 50g
CDN-CM-22 meas	797		
CDN-CM-22 cert	718		
CDN-GS-5P meas		4.70	117
CDN-GS-5P cert		4.780	119.0
BLM-CM-1 (5136021) orig	188	0.20	< 3
BLM-CM-1 (5136021) dup	187	0.22	< 3
BLM-CM-6 (5136026) orig	> 3000	4.20	4
BLM-CM-6 (5136026) dup	> 3000	3.98	5

ANALYSIS METHODS

Method Code	Description
WT	SAMPLE WEIGHT
FA-AAS	Fire Assay - AAS, SOP 410
FA-GRAV	Fire Assay Gravimetric. SOP 411,412

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