ATTACHMENT D3

Subsurface Investigation Report

Dodge Flat Solar Energy Center
Subsurface Investigation
Washoe County, Nevada

Prepared for:

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APPENDIX

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1 INTRODUCTION

Dudek was contracted to investigate potential subsurface impacts at the Dodge Flat Solar Energy Center located west, southwest, and northwest of the intersection of Olinghouse Road and the NV-447 near Wadsworth in Washoe County, Nevada (Figure 1; the site) due to former mining operations. The site is currently vacant land with multiple bermed areas, dry pits, dirt roads, and wells; power transmission lines bisect the northwestern-most parcel in a northeast- to southwest-trend. Two high-pressure natural gas pipelines are present on the southeastern-most parcel. The site is located near the former Upper and Lower Olinghouse Mines. Potential contamination associated with the former mining operations includes metals and cyanide.

Dudek conducted a subsurface investigation at the site in March 2017 in an attempt to identify potential soils contamination from former mining activities at the site. Soil samples were analyzed for metals, pH, and cyanide. Liquid extracted from the soil samples using the synthetic precipitation leaching procedure (SPLP) was also analyzed for metals to estimate the concentrations of metals that might leach from the site soils.

The sampling was limited to eight locations over the approximately 1,579 acre site with six of the sample sites located in areas that were thought to be previously disturbed by mining activities and two sample sites located in undisturbed “background” areas. While it is understood that some operations related to the Olinghouse Mine activity were conducted within the hatched area on Figure 1, the explicit history of this area is not well known. Regardless, the limited number of sampling sites were located in areas considered representative of the site, as samples were collected from the locations identified as most likely to have impacts (settling ponds and borrow pit with debris). However, based on the limitations noted, it is possible that impacts are present in other areas of the site.

The sampling results indicate that shallow site soils in the ponds and borrow pit do not contain metals or cyanide contaminants at concentrations greater than the regulatory threshold concentrations or background concentrations. Similarly, concentrations of metals that might be expected to leach from the site soils do not exceed the regulatory thresholds or background levels. Therefore, the former settling ponds and borrow pit areas of the site do not appear to present an environmental or human health hazard.

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2 SITE DESCRIPTION

The site is located to the west, northwest, and southwest of the intersection of Olinghouse Road and NV-447 in Washoe County, Nevada. The site consists of 3 parcels (APNs 079-180-16, 079-150-11, and 079-150-29) totaling approximately 1,579 acres of land. The site consists of vacant land with multiple bermed areas and a former borrow pit. The bermed areas and borrow pit are the main subject of this subsurface investigation.

The site is located in the vicinity of the Olinghouse Mine District. Based on a review of on-line documents about the Olinghouse Mine District and based on review of aerial photographs, the former Upper Olinghouse Mine was located approximately 4 miles west of the site. The Upper Olinghouse Mine was mined intermittently since 1860, with the main open-pit mining operation conducted between 1985 and 1988 (Robyn, 1994). The Lower Olinghouse Mine was located approximately 1.25 miles west of the site. The Lower Olinghouse Mine was operated from 1989 until the early 1990s (Robyn, 1994 and www.westernmininghistory.com). Additional mining may have been conducted in the late 1990s.

The main subject of the investigation is a bermed area possibly used previously as a settling pond/sedimentation evaporation pond for mine tailings (mine tailings may have been processed west or southwest of the site, and then the processed tailings were possibly piped to the site to settle out fine-grained material). Additionally, it is possible that the bermed areas were a stormwater event pond associated with the former mining activity.

This investigation also focuses on the former borrow pit located south of the bermed areas, which was observed to contain debris including used tires, rusted cans and other metal, and broken glass.

The surrounding area is largely undeveloped, vacant land. Several prospects are located in the site vicinity. Free-range cattle grazing was observed on the site and on adjacent properties. Several residential properties with multiple out buildings were observed to the southwest of the site. A substation was observed to the east; further east was vacant, undeveloped land and NV-447. A small barn and water tower were observed to the north. The land to the south appeared to be vacant, undeveloped land.

Dudek reviewed aerial photographs to obtain additional information about the history of the site. Aerial photographs for years 1954, 1994, 2006, 2010, and 2013 were reviewed and are described in the table below.

Historical Aerial Photograph Review

Year	Site Description	Adjacent Property Descriptions
1954	Olinghouse Road and several other dirt roads are present on the site. A small pit is present on the southeastern portion of the site. The remainder of the site is vacant, undeveloped land.	N/NE: NV-447 and vacant, undeveloped land SE: Area of land cleared of vegetation and vacant, undeveloped land SW: Vacant, undeveloped land NW: Vacant, undeveloped land
1994	Bermed areas cleared of vegetation are present in the central portion of the site. Two small pits are located on the southeastern portion of the site.	NE: Substation and vacant, undeveloped land SE: Similar to 1954 SW: Several small structures (residences) NW: Similar to 1954
2006, 2010, 2013	Similar to 1994	Similar to previous aerial photos

Dudek also reviewed topographic maps to obtain information about the history of the site. Topographic maps for years 1963, 1982, and 1985 were reviewed and are described in the table below.

Historical Topographic Map Review

Year	Site Description	Adjacent Property Descriptions
1963	Olinghouse Road and NV-447 are depicted. Several additional dirt roads are present throughout the site. Two prospects are depicted in the northwestern corner of the site. Two ephemeral streams are depicted in the central portion of the site, draining toward the east to the Truckee River. The majority of the site appears to be vacant, undeveloped land.	NE: Vacant, undeveloped land SE: Vacant, undeveloped land SW: Vacant, undeveloped land W/NW: Multiple prospects and tunnels in the Pah Rah Range
1982	Similar to 1963.	Similar to 1963.
1985	Two borrow pits are depicted on the southeastern portion of the site. A northeast-trending pipeline is depicted on the southeastern portion of the site. An additional prospect and a stream are depicted on the northwestern portion of the site. Power transmission lines trending northeast-southwest are depicted on the northwestern portion of the site.	NE: Vacant, undeveloped land E: Substation SE: Dry pond and vacant, undeveloped land W/SW: Additional dirt roads and 4 small structures W/NW: Multiple prospects and tunnels in the Pah Rah Range

3 ENVIRONMENTAL SETTING

Portions of the site may have been used as settling basins for partially-processed mine tailings. The shallow soils within the settling basins appear to be unconsolidated silty and clayey sediment. Shallow soils outside of the basins appear to be silty sands.

The site is located east of the Pah Rah Range in an alluvial plain. The Pah Rah Range is known for ore deposits including precious metals and other accessory minerals.

Ephemeral braided stream systems flow from the Pah Rah Range, through the site, toward the east. The Truckee River is located approximately 3 miles east of the site. The Truckee River flows toward Pyramid Lake, located approximately 13 miles north of the site.

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4 INVESTIGATION

Dudek conducted a subsurface investigation at the site in order to evaluate the potential presence of mining-related contaminants including metals and cyanide. The investigation was conducted in the areas deemed most likely to have impacts from former mining activities (the settling ponds and the former borrow pit with debris).

The investigation included a utility mark-out, a geophysical survey to clear the sample locations for underground utilities, and soil sampling.

Dudek visited the site on Sunday March 19, 2017 to conduct an initial reconnaissance and evaluate potential boring locations based on observed site features and accessibility. The following features were noted: two high-pressure natural gas pipelines located on the southwestern portion of the site, several rusted monument boxes with PVC pipe, elevated bermed areas, several shallow pits/dry ponds, a groundwater well with attached piping but no motor, power transmission lines, and telephone lines.

On Wednesday March 22, 2017, Dudek oversaw a geophysical survey of the site conducted by Penhall Company. Penhall used ground penetrating radar (GPR) to mark utility locations; the natural gas pipelines (marked with permanent aboveground signage on the southwestern potion of the site) were the only subsurface utilities observed during the survey.

Following utility clearance, Dudek conducted soil sampling on March 22, 2017. Soil boring locations are depicted on Figure 1. The soil borings were advanced using a direct push drill rig operated by Cascade Drilling, L.P.

The investigation on March 22, 2017 consisted of the advancement of 8 soil borings at the site and the collection of 24 soil samples to depths of up to 5 feet below ground surface (bgs; soil samples were collected from each boring in acetate sleeves at 1, 3, and 5 feet bgs).

The soil samples were labeled, placed in zip-loc bags, and placed in a cooler on ice. The samples were shipped to Test America Laboratories, a California- and Nevada-certified analytical laboratory via FedEx overnight. The samples were analyzed for total metals (EPA Method 6010/7471), SPLP metals (EPA Method 1312/6010/7471), pH (EPA Method 9045C), and total cyanide (EPA Method 9010C/9014).

The soil samples collected from 5 feet bgs (other than the soil samples collected from within the former settling ponds, which were analyzed for total metals) were held by the laboratory for analysis if the shallower sample contained the analyzed constituents at concentrations greater than the regulatory threshold values or background.

No groundwater was encountered during the sampling event. Soil borings were abandoned using cement grout.

4.1 Sample Descriptions

Eight borings were advanced on March 22, 2017 by Cascade Drilling, L.P to a depth of 5 feet bgs. The borings were advanced on the central parcel (APN 079-150-11) and the southern parcel (APN 079-180-16). Soil samples were collected from each of the borings at 1, 3, and 5 feet bgs.

Borings DFSEP1 and DFSEP8 were advanced in areas reportedly not associated with and upgradient of previous on-site mining-related operations (Figure 1). Therefore, the samples from borings DFSEP1 and DFSEP8 are considered background samples.

Borings DFSEP2 through DFSEP7 were advanced in areas of suspected former mining-related operations (Figure 1). The soils observed in the borings are described below; no water was encountered in any of the borings advanced at the site. Boring locations are described as follows and shown on Figure 1:

- Boring DFSEP1 was advanced in the northwestern corner of the central parcel on the south side of a dirt road. This boring is considered a background sample as the boring is located upgradient of previous on-site mining-related activities. The soils encountered were silty sand to 3 feet bgs and sandy silt with trace fine gravel to 5 feet bgs.
- Boring DFSEP2 was advanced in the western-central portion of the central parcel. The boring was advanced to the southeast of a dirt road in an area covered with sparse vegetation. The soils encountered were silty sand to 3 feet bgs and silty gravelly sand to 5 feet bgs; the soil was damp at 0.5 feet bgs but the remainder of the soil was dry.
- Boring DFSEP3 was advanced in the northeastern portion of the central parcel within a bermed pond area. The soils encountered were dark brown silty clay and clay to 3 feet bgs and silty sand to 5 feet bgs. The soils were moist to 3 feet bgs and the remainder were dry.
- Boring DFSEP4 was advanced along the eastern/southeastern boundary of the central parcel within a bermed pond area. The soils encountered were clay (damp) to 1 foot bgs, silty clay (damp) to 4 feet bgs, and silt (dry) to 5 feet bgs.
- Boring DFSEP5 was advanced in the central portion of the central parcel within a bermed pond area. The soils encountered were silty clay (damp) to 3 feet bgs, clay (damp) to 4 feet bgs, and silt (dry) to 5 feet bgs.
- Boring DFSEP6 was advanced on the eastern-northeastern boundary of the central parcel within a bermed pond area. The soils encountered were silty clay (damp) to 0.5 feet bgs, clay (damp) to 3 feet bgs, and silt (dry) to 5 feet bgs.

- Boring DFSEP7 was advanced within a former borrow pit located on the southern parcel. Miscellaneous debris was observed in the area including used tires, rusted cans and other metal, and broken glass. The soils encountered were silt (dry) to 3 feet bgs, silt with trace sand (damp) to 4 feet bgs, and silt (damp) to 5 feet bgs.
- Boring DFSEP8 was advanced on the western side of the southern parcel. The boring was advanced on the west side of a dirt road in an area covered with sparse to moderate vegetation. The soils encountered were sandy silt (damp) to 3 feet bgs and silt (dry) to 5 feet bgs.

4.2 Soil Sample Results

The analytical results of the soil sampling are summarized this section and in Table 1. The laboratory analytical reports are presented in Appendix A.

4.2.1 Soil Sample Results - Cyanide

Sixteen soil samples from the eight sample locations were analyzed by Test America Laboratories for total cyanide by EPA Method 9010C/9014. No cyanide was detected in the site samples at concentrations greater than the reporting limit of 0.5 milligrams per kilogram (mg/kg; Table 1). Therefore, there were no detections above the Nevada Division of Environmental Protection (NDEP) soil screening level of 16 mg/kg (the most conservative of the soil screening levels, which also include EPA Regional Screening Levels [RSLs], and two California-specific action levels).

4.2.2 Soil Sample Results - Metals

Twenty soil samples from the eight sample locations were analyzed by Test America Laboratories for Title 22 Metals by EPA Method 6010B/7471A. All Title 22 metals other than antimony were detected in at least one of the site soil samples.

Thallium was detected at concentrations greater than the regulatory thresholds (specifically the NDEP soil screening level; Table 1). Thallium was detected at concentrations ranging from 6.5 to 9 mg/kg in the background samples and 5.1 to 8.3 mg/kg in the settling pond and borrow pit samples (Table 1). These concentrations are greater than the NDEP Draft Guidance for Discovery Events Reportable Concentration of 5.1 (Table 1); however, as noted in the NDEP Guidance, this threshold is for residential soil. As the soil sample concentrations are within the background concentrations and are less than the industrial screening levels (EPA RSL, Regional Water Quality Control Board [RWQCB] Environmental Screening Levels [ESLs] and Department of Toxic Substances Control [DTSC] soil screening levels), it does not appear that former mining activities have impacted the shallow soils at the site with thallium or other metals.

Arsenic was also detected at concentrations greater than the regulatory thresholds, but within background concentrations (Table 1).

4.2.3 Soil Sample Results – SPLP Metals

Sixteen soil samples were also analyzed for leachable metals using the synthetic precipitation leaching procedure. This procedure involved the extraction of a liquid sample following the addition of an acidic solution (pH 5) to the soil sample. The liquid sample was then analyzed for metals by EPA Method 6010B/7471A. This procedure simulates what might leach from in-place soils following infiltration of precipitation.

The following metals were detected in the extract at concentrations greater than the method detection limit: antimony, barium, chromium, copper, lead, nickel, selenium, vanadium, zinc, and mercury (Table 1). The majority of the detections were J-flagged, meaning that the metals were detected at concentrations less than the reporting limit, but greater than the method detection limit. As these concentrations are approaching the lowest concentration that can be detected by the laboratory instrumentation/method, the J-flagged concentrations are considered estimated.

The SPLP extract sample concentrations were compared to freshwater habitat screening levels (EPA Region III Freshwater Screening Benchmarks and RWQCB ESLs for freshwater habitat) and groundwater drinking water standards (EPA maximum contaminant levels [MCLs]). Concentrations of antimony, copper, lead, selenium, vanadium, and mercury exceeded the freshwater or groundwater standards in both the background and the settling pond/borrow pit samples. The concentrations detected in the settling pond and borrow pit samples were in the range of the background concentrations (with the average detected concentrations being less than or equal to the background concentrations).

As the SPLP metals concentrations are either less than the freshwater and groundwater thresholds or are in the range of background concentrations, it does not appear that former mining activities have impacted the shallow soils at the site with metals that might leach and adversely affect surface waters or groundwater.

4.2.4 Soil Sample Results – pH

The sixteen soil samples were analyzed for pH. The pH of the background soil samples ranged from 8.4 to 9.1. The pH of the settling pond and borrow pit samples ranged from 7.8 to 9.0. The pH of the site soils are therefore neutral to slightly basic and are not a concern from either a hazards or leaching perspective (The mobility of metals increases in acidic soils. Therefore, the metals would be expected to have low mobility in the site soils).

4.2.5 Soil Sample Results – Quality Control Evaluation

The laboratory quality control analysis for the metals, SPLP metals, cyanide, and pH analyses included analysis of method blank samples, laboratory control spike (LCS) and LCS duplicate samples, as well as matrix spike (MS) and MS duplicate (MSD) samples. Evaluation of the laboratory quality control samples indicates acceptable soil data.

Three method blanks were analyzed for total metals analysis. No metals were detected in the blank samples. Four method blanks were analyzed for SPLP metals analyses. Antimony was detected in two method blank samples while copper and lead were detected in one of the blank samples. Therefore, the SPLP antimony, copper, and lead concentrations in samples DFSEP6-3, DFSEP7-1, DFSEP7-3, DFSEP8-1, and DFSEP8-3 may be biased high.

Three LCS/LCS duplicate samples were analyzed for the total metals analysis. The percent recoveries and the relative percent difference for the LCS and LCS duplicates were within the specified laboratory control range indicating acceptable precision and accuracy. Four LCS/LCS duplicates were analyzed for the SPLP analysis. The percent recovery for chromium in two of the LCS samples was high, indicating a possible high bias for chromium.

Three MS/MSD samples were analyzed for the total metals analysis. The percent recoveries for the MS and/or MSD for antimony were low in all three samples. The low percent recovery appears to be due to matrix interference as the percent recoveries in the LCS samples were in range. The percent recoveries in one of the MS/MSD samples were high for barium and vanadium; however, the percent recoveries in the LCS samples were in range. The relative percent differences in the MS/MSD samples were within range.

Four MS/MSD samples were analyzed for the SPLP metals analysis. The percent recoveries and relative percent differences were within range.

The percent recoveries and relative percent differences for cyanide were within the acceptable range. The relative percent differences for pH were also in range.

This evaluation indicates acceptable soil data.

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5 CONCLUSIONS

Dudek conducted this subsurface investigation to determine if shallow subsurface impacts associated with the former mining activities are present at the site. Soil samples were collected from locations considered to be representative of the area that was previously disturbed by past mining activities. Five soil boring locations were within the settling ponds/bermed area in the central parcel, one site was located within the former borrow pit in which debris was observed on the southern parcel, and two background sample sites were located within the approximately 1,579 acre site.

The bermed area was possibly used previously as a settling pond/sedimentation evaporation pond for mine tailings or possibly as a stormwater event pond associated with the former mining activity. The former mining activity in the site vicinity includes the former Upper Olinghouse Mine (located approximately 4 miles west of the site and mined intermittently since 1860, with the main open-pit mining operation conducted between 1985 and 1988) and the former Lower Olinghouse Mine (located approximately 1.25 miles west of the site and mined from 1989 until the early 1990s).

This investigation also focuses on the former borrow pit located south of the bermed areas, which was observed to contain debris including used tires, rusted cans and other metal, and broken glass.

The two background borings were advanced upgradient (west) of the former mining activity areas.

Sixteen soil samples were analyzed from the eight sample locations (from 1 and 3 feet bgs). The samples were analyzed for total metals (20 samples analyzed), cyanide, and pH. Arsenic and thallium were the only metals detected at concentrations greater than the regulatory thresholds; however, the concentrations were within the range of background concentrations. No cyanide was detected in the soil samples and the pH of the soil samples was neutral to slightly basic. Therefore, no hazardous impacts from former mining activities were identified in the shallow site soils sampled.

Extract from the samples was also analyzed for SPLP metals to estimate the concentrations of metals that could leach from the soils. The SPLP metals concentrations were compared to freshwater habitat and groundwater thresholds to determine if potential leachate from the site could impact surface water or groundwater in the site vicinity. Concentrations of antimony, copper, lead, selenium, vanadium, and mercury exceeded the freshwater or groundwater standards in both the background and the settling pond/borrow pit samples. The concentrations detected in the settling pond and borrow pit samples were in the range of the background concentrations (with the average detected concentrations being less than or equal to the background concentrations). Therefore, it is not likely that the former mining activities have impacted shallow site soils such that leachate concentrations would affect human health or the environment. It is possible that shallow site soils could impact surface water quality if sedimentladen runoff were allowed to leave the site during construction. However, engineering controls and best management practices identified in the site Stormwater Quality Management Plan will be employed to minimize such runoff from impacting downstream water bodies.

6 LIMITATIONS

The findings and conclusions presented in this report are professional opinions based solely upon the indicated data described in this report, visual observations of the site and vicinity and our interpretation of the available historical information and documents reviewed. Dudek makes no warranty as to the accuracy of statements made by others or the accuracy of information included in documentation reviewed in connection with this study. It should be recognized that this study was not intended to be a definitive investigation of potential contamination at the site and that the recommendations do not necessarily include all conditions that may be present. The sampling was limited to eight locations over the approximately 1,579 acre site with six of the sample sites located in areas that were thought to be previously disturbed by mining activities and two sample sites located in undisturbed “background” areas. Because the scope of the investigation was limited, it is possible that currently unrecognized conditions or contamination might exist at the site.

No warranties or guarantees or representations, expressed or implied, are made by Dudek, except that this report has been prepared in accordance with current generally accepted practices and standards consistent with the level of care and skill exercised under similar circumstances by other professionals performing the same or similar services. The conclusions are intended exclusively for the purpose outlined herein and may not be suitable to satisfy the needs of other users. Thus, any use or reuse of this document is at the sole risk of said user.

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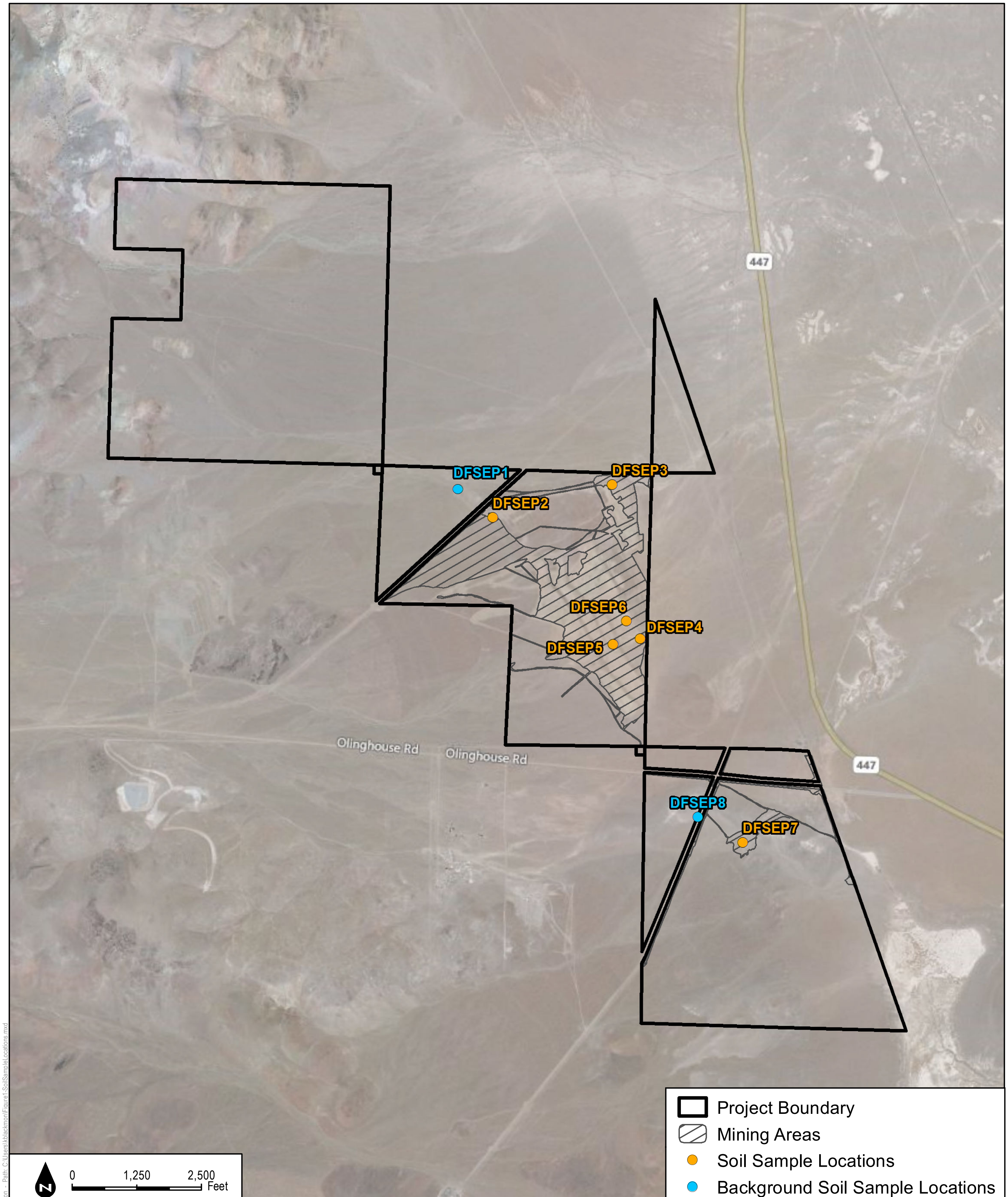
7 REFERENCES

Robyn, Thomas L. 1994. Geology and Ore Controls of the Lower Olinghouse Placer Gold Mine, Nevada. Economic Geology Volume 89, 1994. Pages 1614 – 1622.



DUDEK

SOURCE: ESRI Basemaps

FIGURE 1

Soil Sample Locations

Subsurface Investigation for the Dodge Flat Solar Energy Center

Washoe, NV

Table 1
Soil Sample Results
Olinghouse Road
Wadsworth, Californa

Soil Sample Analysis

Analyte	Comparison Criteria				Background Samples				Mine-Related Area Samples															
Total Metals by EPA Method 6010B/7471A (mg/kg)	**RWQCB ESLs (industrial, human health basis)**	**NDEP Soil Screening Levels**	**EPA RSL (industrial, HQ=1)**	**DTSC HERO Note 3**	**DFSEP1-1**	**DFSEP1-3**	**DFSEP8-1**	**DFSEP8-3**	**DFSEP2-1**	**DFSEP2-3**	**DFSEP3-1**	**DFSEP3-3**	**DFSEP3-5**	**DFSEP4-1**	**DFSEP4-3**	**DFSEP4-5**	**DFSEP5-1**	**DFSEP5-3**	**DFSEP5-5**	**DFSEP6-1**	**DFSEP6-3**	**DFSEP6-5**	**DFSEP7-1**	**DFSEP7-3**
					1 foot	3 feet	1 feet	3 feet	1 feet	3 feet	1 foot	3 feet	5 feet	1 feet	3 feet	5 feet	1 foot	3 feet	5 feet	1 feet	3 feet	5 feet	1 foot	3 feet
Antimony	470	5	470	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	0.31	0.39	3	0.36	9.7	9.3	7.1	15	7.3*	6.1*	8.6*	11*	9.6*	8.5*	10*	12*	9.8*	8.9*	8.4*	10*	8.9*	ND	14*	14*
Barium	220,000	1,600	220,000	N/A	130	150	200	180	210	160	130	160	190	130	99	170	150	130	190	130	140	120	160	160
Beryllium	2,200	63	2,300	210	0.53	0.56	0.62	0.42 J	0.63	0.63	0.78	0.59	0.62	0.77	0.72	0.87	0.78	0.78	0.76	0.74	0.74	ND	0.72	0.80
Cadmium	580	8	980	7.3	0.25 J	0.31 J	0.30 J	ND	0.31 J	ND	0.54	ND	0.26 J	0.45 J	0.40 J	0.39 J	0.43 J	0.39 J	0.37 J	0.36 J	0.44 J	0.29 J	0.32 J	0.35 J
Chromium (total)	1,800,000 (Cr III)	120,000 (Cr III)	1,800,000 (Cr III)	170,000	30	36	30	17	29	24	31	33	30	28	27	30	36	31	31	43	36	14	23	21
Cobalt	350	23	350	N/A	9.8	14	13	7.5	12	11	17	13	11	15	15	16	17	16	14	18	16	ND	11	12
Copper	47,000	3,100	47,000	N/A	27	25	27	20	26	30	38	26	30	35	34	41	41	37	32	41	37	68	28	29
Lead	320	400	800	320	6.9	7.4	6.7	5.1	8.4	6.0	13	8.0	7.0	8.8	8.8	10	12	8.3	8.1	14	8.3	1.7 J	7.5	7.0
Molybdeum	5,800	390	5,800	N/A	ND	ND	ND	1.1 J	ND	ND	ND	1.1 J	ND	ND	1.3 J	ND	ND	ND	ND	ND	ND	3.5	ND	ND
Nickel	11,000	130	22,000	N/A	17	24	21	12	20	19	22	21	19	21	19	21	24	22	24	25	24	7.9	16	17
Selenium	5,800	5	5,800	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3 J	ND	ND
Silver	5,800	34	5,800	1,500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.77 J	ND	ND	0.77 J	ND	ND	ND	ND
Thallium	12	5.1	12	N/A	ND	**6.5 J**	**9.0 J**	**6.5 J**	**6.9 J**	ND	ND	ND	5.1 J	ND	ND	ND	ND	ND	**6.7 J**	**5.4 J**	**7.2 J**	ND	**8.3 J**	**7.6 J**
Vanadium	5,800	390	5,800	1,000	80	89	94	66	77	77	71	83	97	69	68	83	80	74	100	79	83	3.9	74	68
Zinc	350,000	12,000	350,000	N/A	53	64	68	45	61	62	77	63	71	81	71	88	82	82	81	78	82	170	68	68
Mercury	190	6.7	40	N/A	0.038	0.016 J	0.018 J	0.046	0.031	0.17	0.063	0.022	0.018 J	0.10	0.087	0.082	0.21	0.14	0.52	0.067	0.043	0.12	0.028	0.044
Other Analyses																								
Cyanide, Total by EPA Method 9010C/9014 (mg/kg)	24	16	150	N/A	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
pH	N/A	N/A	N/A	N/A	8.5	8.4	9.0	9.1	8.2	9.0	8.8	8.6	NA	8.3	8.4	NA	8.2	8.1	NA	8.2	8.2	NA	7.8	8.1

SPLP Extract Analysis

Analyte	Comparison Criteria			Background Samples				Mine-Related Area Samples											
SPLP Metals by EPA Method 6010B/7471A (mg/l)	**RWQCB ESLs (Fresh Water Habitat)**	**EPA Region III Freshwater Screening Benchmarks**	**EPA Drinking Water MCL**	**DFSEP1-1**	**DFSEP1-3**	**DFSEP8-1**	**DFSEP8-3**	**DFSEP2-1**	**DFSEP2-3**	**DFSEP3-1**	**DFSEP3-3**	**DFSEP4-1**	**DFSEP4-3**	**DFSEP5-1**	**DFSEP5-3**	**DFSEP6-1**	**DFSEP6-3**	**DFSEP7-1**	**DFSEP7-3**
				1 foot	3 feet	1 feet	3 feet	1 feet	3 feet	1 foot	3 feet	1 feet	3 feet	1 foot	3 feet	1 feet	3 feet	1 foot	3 feet
Antimony	0.03	0.03	0.0006	ND	ND	ND	**0.082 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.079 J**
Barium	N/A	0.004	2	ND	ND	0.13 J	0.18 J	0.14 J	ND	0.23	0.24	ND	0.082 J	0.071 J	0.072 J	ND	0.069 J	0.13 J	0.066 J
Chromium	0.18	0.085	0.10	ND	ND	ND	ND	0.07 J	ND	0.044J	0.028 J	ND	0.028 J	ND	ND	ND	ND	ND	ND
Copper	0.009	0.009	1	ND	ND	**0.042 J**	**0.050 J**	ND	ND	**0.063 J**	**0.046 J**	ND	ND	ND	ND	ND	**0.053 J**	**0.060 J**	**0.043 J**
Lead	0.0025	0.0025	0.015	ND	ND	**0.045 J**	**0.055 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.048 J**	**0.076 J**	ND
Nickel	0.052	0.052	N/A	ND	ND	ND	ND	ND	ND	0.03 J	0.028 J	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	0.005	0.001	0.05	ND	ND	ND	**0.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.083 J**	ND	ND
Vanadium	0.019	0.02	N/A	**0.13 J**	**0.042 J**	**0.12 J**	**0.16 J**	**0.065 J**	**0.28**	**0.13 J**	**0.12 J**	ND	**0.072 J**	**0.072 J**	**0.044 J**	**0.058 J**	**0.058 J**	**0.13 J**	**0.12 J**
Zinc	0.12	0.12	5	ND	ND	ND	ND	ND	ND	0.086 J	0.085 J	ND	ND	ND	ND	ND	ND	0.080 J	ND
Mercury	0.0008	0.000026	0.002	**0.0015 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0013 J**	ND	ND
Other Metals	Varies	Varies	Varies	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
* Arsenic concentration is greater than the human health screening level, but is within the background concentrations.
All samples collected by Dudek on March 22, 2017.
DTSC HERO = Department of Toxic Substances Control Human and Ecological Risk Office
EPA MCL - EPA Maximum Contaminant Level for Drinking Water
J-flagged data were detected at a concentration greater than the method detection limit, but less than the reporting limit, and are therefore estimated concentrations.
mg/kg = milligrams per kilogram
mg/l - milligrams per liter
N/A = Not applicable
NA = Not analyzed
ND = Not detected
NDEP Soil Screening Levels - Nevada Division of Environmental Protection Draft Guidelines for Discovery Events
RSL = EPA Regional Screening Level
RWQCB ESL = Regional Water Quality Control Board Environmental Screening Level (San Francisco Region)
TTLC = Title 22 Total Threshold Limit Concentration

APPENDIX A

Laboratory Analytical Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-180360-1
Client Project/Site: Dodge Flat
Revision: 2

For:
Dudek & Associates
750 Second Street
Encinitas, California 92024

Attn: Nicole Peacock

Authorized for release by:
4/6/2017 12:24:15 PM

Danielle Roberts, Senior Project Manager
(949)261-1022
danielle.roberts@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Sample Summary

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-180360-1	DFSEP1-1	Solid	03/22/17 13:25	03/23/17 09:45
440-180360-2	DFSEP1-3	Solid	03/22/17 13:26	03/23/17 09:45
440-180360-4	DFSEP2-1	Solid	03/22/17 13:39	03/23/17 09:45
440-180360-5	DFSEP2-3	Solid	03/22/17 13:40	03/23/17 09:45
440-180360-7	DFSEP3-1	Solid	03/22/17 14:15	03/23/17 09:45
440-180360-8	DFSEP3-3	Solid	03/22/17 14:16	03/23/17 09:45
440-180360-10	DFSEP4-1	Solid	03/22/17 14:42	03/23/17 09:45
440-180360-11	DFSEP4-3	Solid	03/22/17 14:43	03/23/17 09:45
440-180360-13	DFSEP5-1	Solid	03/22/17 14:55	03/23/17 09:45
440-180360-14	DFSEP5-3	Solid	03/22/17 14:56	03/23/17 09:45

Case Narrative

Job ID: 440-180360-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-180360-1

Comments
No additional comments.

Receipt
The samples were received on 3/23/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. No analysis requested for samples 440-180360-7 and 440-180360-8. They are not indicated on Hold either. A container was received for each of them. No analysis were logged in and no NCM was created.

Login by Veronica

Metals
Method(s) 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-395912 and analytical batch 440-396056 were outside control limits for Antimony. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries of multi analytes for preparation batch 440-396391 and analytical batch 440-396588 were outside control limits for multiple analytes. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.(440-180360-A-7-C MS) and (440-180360-A-7-D MSD)

Method(s) 6010B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 440-396227 and 440-396411 and analytical batch 440-396876 recovered outside control limits for the following analytes: Chromium. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.DFSEP1-1 (440-180360-1), DFSEP1-3 (440-180360-2), DFSEP2-3 (440-180360-5), DFSEP5-1 (440-180360-13) and DFSEP5-3 (440-180360-14)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: DFSEP1-1

Date Collected: 03/22/17 13:25
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180360-1
Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	4.9	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Arsenic	**9.7**		3.0	1.5	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Barium	**130**		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Beryllium	**0.53**		0.49	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Cadmium	**0.25**	**J**	0.49	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Chromium	**30**		0.99	0.49	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Cobalt	**9.8**		0.99	0.49	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Copper	**27**		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Lead	**6.9**		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Molybdenum	ND		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Nickel	**17**		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Thallium	ND		9.9	4.9	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Vanadium	**80**		0.99	0.49	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Zinc	**53**		4.9	2.5	mg/Kg		03/24/17 08:46	03/24/17 17:31	5
Silver	ND		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:31	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:14	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:14	1
Barium	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:14	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:14	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:14	1
Chromium	ND	*	0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:14	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:14	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:14	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:14	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:14	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:14	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:14	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:14	1
Vanadium	**0.13**	**J**	0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:14	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:14	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:14	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.0015**	**J**	0.0020	0.0010	mg/L		03/27/17 17:21	03/28/17 01:10	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.038**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 18:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:12	1

1 2 3 4 5 6 7 8 9 10 11 12 13

Client Sample ID: DFSEP1-1

Lab Sample ID: 440-180360-1
Date Collected: 03/22/17 13:25
Matrix: Solid
Date Received: 03/23/17 09:45

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.5		0.1	0.1	SU			03/24/17 16:14	1

Client Sample ID: DFSEP1-3

Lab Sample ID: 440-180360-2
Date Collected: 03/22/17 13:26
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Arsenic	9.3		3.0	1.5	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Barium	150		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Beryllium	0.56		0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Cadmium	0.31	J	0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Chromium	36		0.99	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Cobalt	14		0.99	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Copper	25		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Lead	7.4		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Molybdenum	ND		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Nickel	24		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Thallium	6.5	J	9.9	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Vanadium	89		0.99	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Zinc	64		5.0	2.5	mg/Kg		03/24/17 08:46	03/24/17 17:33	5
Silver	ND		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:33	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:24	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:24	1
Barium	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:24	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:24	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:24	1
Chromium	ND	*	0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:24	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:24	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:24	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:24	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:24	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:24	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:24	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:24	1
Vanadium	0.042	J	0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:24	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:24	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:24	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:21	03/28/17 01:19	1

Client Sample ID: DFSEP1-3

Lab Sample ID: 440-180360-2
Date Collected: 03/22/17 13:26
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.016	J	0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 18:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:12	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.4		0.1	0.1	SU			03/24/17 16:14	1

Client Sample ID: DFSEP2-1

Lab Sample ID: 440-180360-4
Date Collected: 03/22/17 13:39
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Arsenic	7.3		3.0	1.5	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Barium	210		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Beryllium	0.63		0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Cadmium	0.31	J	0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Chromium	29		0.99	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Cobalt	12		0.99	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Copper	26		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Lead	8.4		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Molybdenum	ND		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Nickel	20		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Thallium	6.9	J	9.9	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Vanadium	77		0.99	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Zinc	61		5.0	2.5	mg/Kg		03/24/17 08:46	03/24/17 17:35	5
Silver	ND		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:35	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:26	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:26	1
Barium	0.14	J	0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:26	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:26	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:26	1
Chromium	0.070	J	0.10	0.020	mg/L		03/29/17 16:17	03/30/17 19:02	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:26	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:26	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:26	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:26	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:26	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:26	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:26	1
Vanadium	0.065	J	0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:26	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:26	1

Client Sample ID: DFSEP2-1

Lab Sample ID: 440-180360-4

Date Collected: 03/22/17 13:39

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP) - SPLP West (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:26	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:21	03/28/17 01:21	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.031**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:12	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.2**		0.1	0.1	SU			03/24/17 16:14	1

Client Sample ID: DFSEP2-3

Lab Sample ID: 440-180360-5

Date Collected: 03/22/17 13:40

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Arsenic	**6.1**		3.0	1.5	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Barium	**160**		1.5	0.75	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Beryllium	**0.63**		0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Cadmium	ND		0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Chromium	**24**		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Cobalt	**11**		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Copper	**30**		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Lead	**6.0**		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Molybdenum	ND		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Nickel	**19**		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Thallium	ND		10	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Vanadium	**77**		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Zinc	**62**		5.0	2.5	mg/Kg		03/24/17 08:46	03/24/17 17:37	5
Silver	ND		1.5	0.75	mg/Kg		03/24/17 08:46	03/24/17 17:37	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:28	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:28	1
Barium	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:28	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:28	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:28	1
Chromium	ND	*	0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:28	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:28	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:28	1

Client Sample ID: DFSEP2-3

Lab Sample ID: 440-180360-5

Date Collected: 03/22/17 13:40

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP) - SPLP West (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:28	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:28	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:28	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:28	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:28	1
Vanadium	**0.28**		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:28	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:28	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:28	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:21	03/28/17 01:24	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.17**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:12	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**9.0**		0.1	0.1	SU			03/24/17 16:14	1

Client Sample ID: DFSEP3-1

Lab Sample ID: 440-180360-7

Date Collected: 03/22/17 14:15

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	F1	10	5.0	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Arsenic	**8.6**		3.0	1.5	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Barium	**130**	**F1**	1.5	0.75	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Beryllium	**0.78**		0.50	0.25	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Cadmium	**0.54**		0.50	0.25	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Chromium	**31**		1.0	0.50	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Cobalt	**17**		1.0	0.50	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Copper	**38**		2.0	1.0	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Lead	**13**		2.0	1.0	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Molybdenum	ND		2.0	1.0	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Nickel	**22**		2.0	1.0	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Selenium	ND		3.0	1.7	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Thallium	ND		10	5.0	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Vanadium	**71**	**F1**	1.0	0.50	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Zinc	**77**		5.0	2.5	mg/Kg		03/27/17 15:22	03/28/17 12:32	5
Silver	ND		1.5	0.75	mg/Kg		03/27/17 15:22	03/28/17 12:32	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/29/17 19:52	03/30/17 18:25	1

Client Sample ID: DFSEP3-1

Lab Sample ID: 440-180360-7
Date Collected: 03/22/17 14:15
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP) - SPLP West (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.20	0.070	mg/L		03/29/17 19:52	03/31/17 14:25	1
Barium	**0.23**		0.20	0.060	mg/L		03/29/17 19:52	03/31/17 14:25	1
Beryllium	ND		0.080	0.010	mg/L		03/29/17 19:52	03/31/17 14:25	1
Cadmium	ND		0.10	0.020	mg/L		03/29/17 19:52	03/31/17 14:25	1
Chromium	**0.044**	**J**	0.10	0.020	mg/L		03/29/17 19:52	03/31/17 14:25	1
Cobalt	ND		0.20	0.020	mg/L		03/29/17 19:52	03/31/17 14:25	1
Copper	**0.063**	**J**	0.20	0.030	mg/L		03/29/17 19:52	03/31/17 14:25	1
Lead	ND		0.10	0.040	mg/L		03/29/17 19:52	03/31/17 14:25	1
Molybdenum	ND		0.40	0.020	mg/L		03/29/17 19:52	03/31/17 14:25	1
Nickel	**0.030**	**J**	0.20	0.020	mg/L		03/29/17 19:52	03/31/17 14:25	1
Selenium	ND		0.10	0.080	mg/L		03/29/17 19:52	03/31/17 14:25	1
Thallium	ND		0.10	0.080	mg/L		03/29/17 19:52	03/31/17 14:25	1
Vanadium	**0.13**	**J**	0.20	0.030	mg/L		03/29/17 19:52	03/31/17 14:25	1
Zinc	**0.086**	**J**	0.40	0.060	mg/L		03/29/17 19:52	03/31/17 14:25	1
Silver	ND		0.20	0.060	mg/L		03/29/17 19:52	03/31/17 14:25	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		04/03/17 15:42	04/03/17 21:06	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.063**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.49	0.42	mg/Kg		03/27/17 14:31	03/28/17 17:12	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.8**		0.1	0.1	SU			03/29/17 15:08	1

Client Sample ID: DFSEP3-3

Lab Sample ID: 440-180360-8
Date Collected: 03/22/17 14:16
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	4.9	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Arsenic	**11**		3.0	1.5	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Barium	**160**		1.5	0.74	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Beryllium	**0.59**		0.49	0.25	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Cadmium	ND		0.49	0.25	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Chromium	**33**		0.99	0.49	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Cobalt	**13**		0.99	0.49	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Copper	**26**		2.0	0.99	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Lead	**8.0**		2.0	0.99	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Molybdenum	**1.1**	**J**	2.0	0.99	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Nickel	**21**		2.0	0.99	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Selenium	ND		3.0	1.7	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Thallium	ND		9.9	4.9	mg/Kg		03/27/17 15:22	03/28/17 12:42	5

Client Sample ID: DFSEP3-3

Lab Sample ID: 440-180360-8

Date Collected: 03/22/17 14:16

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	**83**		0.99	0.49	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Zinc	**63**		4.9	2.5	mg/Kg		03/27/17 15:22	03/28/17 12:42	5
Silver	ND		1.5	0.74	mg/Kg		03/27/17 15:22	03/28/17 12:42	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/29/17 19:52	03/31/17 14:35	1
Arsenic	ND		0.20	0.070	mg/L		03/29/17 19:52	03/31/17 14:35	1
Barium	**0.24**		0.20	0.060	mg/L		03/29/17 19:52	03/31/17 14:35	1
Beryllium	ND		0.080	0.010	mg/L		03/29/17 19:52	03/31/17 14:35	1
Cadmium	ND		0.10	0.020	mg/L		03/29/17 19:52	03/31/17 14:35	1
Chromium	**0.028**	**J**	0.10	0.020	mg/L		03/29/17 19:52	03/31/17 14:35	1
Cobalt	ND		0.20	0.020	mg/L		03/29/17 19:52	03/31/17 14:35	1
Copper	**0.046**	**J**	0.20	0.030	mg/L		03/29/17 19:52	03/31/17 14:35	1
Lead	ND		0.10	0.040	mg/L		03/29/17 19:52	03/31/17 14:35	1
Molybdenum	ND		0.40	0.020	mg/L		03/29/17 19:52	03/31/17 14:35	1
Nickel	**0.028**	**J**	0.20	0.020	mg/L		03/29/17 19:52	03/31/17 14:35	1
Selenium	ND		0.10	0.080	mg/L		03/29/17 19:52	03/31/17 14:35	1
Thallium	ND		0.10	0.080	mg/L		03/29/17 19:52	03/31/17 14:35	1
Vanadium	**0.12**	**J**	0.20	0.030	mg/L		03/29/17 19:52	03/31/17 14:35	1
Zinc	**0.085**	**J**	0.40	0.060	mg/L		03/29/17 19:52	03/31/17 14:35	1
Silver	ND		0.20	0.060	mg/L		03/29/17 19:52	03/31/17 14:35	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		04/03/17 15:42	04/03/17 21:19	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.022**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.51	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:13	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.6**		0.1	0.1	SU			03/29/17 15:08	1

Client Sample ID: DFSEP4-1

Lab Sample ID: 440-180360-10

Date Collected: 03/22/17 14:42

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	4.9	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Arsenic	**8.5**		3.0	1.5	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Barium	**130**		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Beryllium	**0.77**		0.49	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Cadmium	**0.45**	**J**	0.49	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Chromium	**28**		0.99	0.49	mg/Kg		03/24/17 08:46	03/24/17 17:45	5

Client Sample ID: DFSEP4-1

Date Collected: 03/22/17 14:42
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180360-10
Matrix: Solid

Method: 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	**15**		0.99	0.49	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Copper	**35**		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Lead	**8.8**		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Molybdenum	ND		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Nickel	**21**		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Thallium	ND		9.9	4.9	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Vanadium	**69**		0.99	0.49	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Zinc	**81**		4.9	2.5	mg/Kg		03/24/17 08:46	03/24/17 17:45	5
Silver	ND		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:45	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:37	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:37	1
Barium	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:37	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:37	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:37	1
Chromium	ND		0.10	0.020	mg/L		03/29/17 16:17	03/30/17 18:49	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:37	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:37	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:37	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:37	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:37	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:37	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:37	1
Vanadium	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:37	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:37	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:37	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:21	03/28/17 01:27	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.10**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:13	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.3**		0.1	0.1	SU			03/24/17 16:14	1

Client Sample ID: DFSEP4-3

Date Collected: 03/22/17 14:43
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180360-11
Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Arsenic	**10**		3.0	1.5	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Barium	**99**		1.5	0.75	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Beryllium	**0.72**		0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Cadmium	**0.40**	**J**	0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Chromium	**27**		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Cobalt	**15**		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Copper	**34**		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Lead	**8.8**		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Molybdenum	**1.3**	**J**	2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Nickel	**19**		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Thallium	ND		10	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Vanadium	**68**		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Zinc	**71**		5.0	2.5	mg/Kg		03/24/17 08:46	03/24/17 17:47	5
Silver	ND		1.5	0.75	mg/Kg		03/24/17 08:46	03/24/17 17:47	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:40	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:40	1
Barium	**0.082**	**J**	0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:40	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:40	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:40	1
Chromium	**0.028**	**J**	0.10	0.020	mg/L		03/29/17 16:17	03/30/17 19:00	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:40	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:40	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:40	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:40	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:40	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:40	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:40	1
Vanadium	**0.072**	**J**	0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:40	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:40	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:40	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:21	03/28/17 01:35	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.087**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:13	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.4**		0.1	0.1	SU			03/24/17 16:34	1

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-1

Client Sample ID: DFSEP5-1

Date Collected: 03/22/17 14:55
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180360-13
Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Arsenic	**9.8**		3.0	1.5	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Barium	**150**		1.5	0.75	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Beryllium	**0.78**		0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Cadmium	**0.43**	**J**	0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Chromium	**36**		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Cobalt	**17**		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Copper	**41**		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Lead	**12**		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Molybdenum	ND		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Nickel	**24**		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Thallium	ND		10	5.0	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Vanadium	**80**		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Zinc	**82**		5.0	2.5	mg/Kg		03/24/17 08:46	03/24/17 17:49	5
Silver	**0.77**	**J**	1.5	0.75	mg/Kg		03/24/17 08:46	03/24/17 17:49	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:42	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:42	1
Barium	**0.071**	**J**	0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:42	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:42	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:42	1
Chromium	ND	*	0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:42	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:42	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:42	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:42	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:42	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:42	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:42	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:42	1
Vanadium	**0.072**	**J**	0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:42	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:42	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:42	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:23	03/28/17 01:38	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.21**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:13	1

Client Sample ID: DFSEP5-1

Lab Sample ID: 440-180360-13

Date Collected: 03/22/17 14:55
Date Received: 03/23/17 09:45

Matrix: Solid

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.2**		0.1	0.1	SU			03/24/17 16:34	1

Client Sample ID: DFSEP5-3

Lab Sample ID: 440-180360-14

Date Collected: 03/22/17 14:56
Date Received: 03/23/17 09:45

Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	4.9	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Arsenic	**8.9**		3.0	1.5	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Barium	**130**		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Beryllium	**0.78**		0.49	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Cadmium	**0.39**	**J**	0.49	0.25	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Chromium	**31**		0.99	0.49	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Cobalt	**16**		0.99	0.49	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Copper	**37**		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Lead	**8.3**		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Molybdenum	ND		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Nickel	**22**		2.0	0.99	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Thallium	ND		9.9	4.9	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Vanadium	**74**		0.99	0.49	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Zinc	**82**		4.9	2.5	mg/Kg		03/24/17 08:46	03/24/17 17:51	5
Silver	ND		1.5	0.74	mg/Kg		03/24/17 08:46	03/24/17 17:51	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:44	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:44	1
Barium	**0.072**	**J**	0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:44	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:44	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:44	1
Chromium	ND	*	0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:44	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:44	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:44	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:44	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:44	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:44	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:44	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:44	1
Vanadium	**0.044**	**J**	0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:44	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:44	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:44	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:23	03/28/17 01:40	1

Client Sample ID: DFSEP5-3

Date Collected: 03/22/17 14:56
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180360-14
Matrix: Solid

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.14**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.51	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:13	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.1**		0.1	0.1	SU			03/24/17 16:34	1

Method Summary

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL IRV
7470A	Mercury (CVAA)	SW846	TAL IRV
7471A	Mercury (CVAA)	SW846	TAL IRV
9014	Cyanide	SW846	TAL IRV
9045C	pH	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client Sample ID: DFSEP1-1

Lab Sample ID: 440-180360-1

Date Collected: 03/22/17 13:25
Date Received: 03/23/17 09:45

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.00 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396411	03/27/17 16:44	ZEM	TAL IRV
SPLP West	Analysis	6010B		1			396876	03/29/17 14:14	EN	TAL IRV
Total/NA	Prep	3050B			2.03 g	50 mL	395912	03/24/17 08:46	DT	TAL IRV
Total/NA	Analysis	6010B		5			396056	03/24/17 17:31	K1E	TAL IRV
SPLP West	Leach	1312			100.00 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396418	03/27/17 17:21	DB	TAL IRV
SPLP West	Analysis	7470A		1			396461	03/28/17 01:10	DB	TAL IRV
Total/NA	Prep	7471A			0.50 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 18:45	DB	TAL IRV
Total/NA	Prep	9010B			2.01 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:12	SN	TAL IRV
Soluble	Leach	DI Leach			19.99 g	20 mL	396006	03/24/17 14:39	RB	TAL IRV
Soluble	Analysis	9045C		1			396029	03/24/17 16:14	RB	TAL IRV

Client Sample ID: DFSEP1-3

Lab Sample ID: 440-180360-2

Date Collected: 03/22/17 13:26
Date Received: 03/23/17 09:45

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			99.98 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396411	03/27/17 16:44	ZEM	TAL IRV
SPLP West	Analysis	6010B		1			396876	03/29/17 14:24	EN	TAL IRV
Total/NA	Prep	3050B			2.02 g	50 mL	395912	03/24/17 08:46	DT	TAL IRV
Total/NA	Analysis	6010B		5			396056	03/24/17 17:33	K1E	TAL IRV
SPLP West	Leach	1312			99.98 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396418	03/27/17 17:21	DB	TAL IRV
SPLP West	Analysis	7470A		1			396461	03/28/17 01:19	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 18:58	DB	TAL IRV
Total/NA	Prep	9010B			2.02 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:12	SN	TAL IRV
Soluble	Leach	DI Leach			20.00 g	20 mL	396006	03/24/17 14:39	RB	TAL IRV
Soluble	Analysis	9045C		1			396029	03/24/17 16:14	RB	TAL IRV

Client Sample ID: DFSEP2-1

Lab Sample ID: 440-180360-4

Date Collected: 03/22/17 13:39
Date Received: 03/23/17 09:45

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			99.97 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396905	03/29/17 16:17	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397183	03/30/17 19:02	VS	TAL IRV
SPLP West	Leach	1312			99.97 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-1

Client Sample ID: DFSEP2-1

Lab Sample ID: 440-180360-4

Date Collected: 03/22/17 13:39

Matrix: Solid

Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Prep	3010A			5 mL	50 mL	396411	03/27/17 16:44	ZEM	TAL IRV
SPLP West	Analysis	6010B		1			396876	03/29/17 14:26	EN	TAL IRV
Total/NA	Prep	3050B			2.02 g	50 mL	395912	03/24/17 08:46	DT	TAL IRV
Total/NA	Analysis	6010B		5			396056	03/24/17 17:35	K1E	TAL IRV
SPLP West	Leach	1312			99.97 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396418	03/27/17 17:21	DB	TAL IRV
SPLP West	Analysis	7470A		1			396461	03/28/17 01:21	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:01	DB	TAL IRV
Total/NA	Prep	9010B			2.01 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:12	SN	TAL IRV
Soluble	Leach	DI Leach			19.99 g	20 mL	396006	03/24/17 14:39	RB	TAL IRV
Soluble	Analysis	9045C		1			396029	03/24/17 16:14	RB	TAL IRV

Client Sample ID: DFSEP2-3

Lab Sample ID: 440-180360-5

Date Collected: 03/22/17 13:40

Matrix: Solid

Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.04 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396411	03/27/17 16:44	ZEM	TAL IRV
SPLP West	Analysis	6010B		1			396876	03/29/17 14:28	EN	TAL IRV
Total/NA	Prep	3050B			2.01 g	50 mL	395912	03/24/17 08:46	DT	TAL IRV
Total/NA	Analysis	6010B		5			396056	03/24/17 17:37	K1E	TAL IRV
SPLP West	Leach	1312			100.04 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396418	03/27/17 17:21	DB	TAL IRV
SPLP West	Analysis	7470A		1			396461	03/28/17 01:24	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:04	DB	TAL IRV
Total/NA	Prep	9010B			1.99 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:12	SN	TAL IRV
Soluble	Leach	DI Leach			20.04 g	20 mL	396006	03/24/17 14:39	RB	TAL IRV
Soluble	Analysis	9045C		1			396029	03/24/17 16:14	RB	TAL IRV

Client Sample ID: DFSEP3-1

Lab Sample ID: 440-180360-7

Date Collected: 03/22/17 14:15

Matrix: Solid

Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.04 g	2000 mL	396703	03/29/17 00:02	CDH	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396943	03/29/17 19:52	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397175	03/30/17 18:25	VS	TAL IRV
SPLP West	Leach	1312			100.04 g	2000 mL	396703	03/29/17 00:02	CDH	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396943	03/29/17 19:52	CDH	TAL IRV

1 2 3 4 5 6 7 8 9 10 11 12 13

Client Sample ID: DFSEP3-1
Lab Sample ID: 440-180360-7

Date Collected: 03/22/17 14:15
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Analysis	6010B		1			397361	03/31/17 14:25	VS	TAL IRV
Total/NA	Prep	3050B			2.01 g	50 mL	396391	03/27/17 15:22	JL	TAL IRV
Total/NA	Analysis	6010B		5			396588	03/28/17 12:32	VS	TAL IRV
SPLP West	Leach	1312			100.04 g	2000 mL	396703	03/29/17 00:02	CDH	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	397742	04/03/17 15:42	DB	TAL IRV
SPLP West	Analysis	7470A		1			397823	04/03/17 21:06	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:07	DB	TAL IRV
Total/NA	Prep	9010B			2.03 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:12	SN	TAL IRV
Soluble	Leach	DI Leach			20.00 g	20 mL	396838	03/29/17 13:19	RB	TAL IRV
Soluble	Analysis	9045C		1			396878	03/29/17 15:08	RB	TAL IRV

Client Sample ID: DFSEP3-3
Lab Sample ID: 440-180360-8

Date Collected: 03/22/17 14:16
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.07 g	2000 mL	396703	03/29/17 00:02	CDH	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396943	03/29/17 19:52	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397361	03/31/17 14:35	VS	TAL IRV
Total/NA	Prep	3050B			2.03 g	50 mL	396391	03/27/17 15:22	JL	TAL IRV
Total/NA	Analysis	6010B		5			396588	03/28/17 12:42	VS	TAL IRV
SPLP West	Leach	1312			100.07 g	2000 mL	396703	03/29/17 00:02	CDH	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	397742	04/03/17 15:42	DB	TAL IRV
SPLP West	Analysis	7470A		1			397823	04/03/17 21:19	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:09	DB	TAL IRV
Total/NA	Prep	9010B			1.98 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:13	SN	TAL IRV
Soluble	Leach	DI Leach			19.99 g	20 mL	396838	03/29/17 13:19	RB	TAL IRV
Soluble	Analysis	9045C		1			396878	03/29/17 15:08	RB	TAL IRV

Client Sample ID: DFSEP4-1
Lab Sample ID: 440-180360-10

Date Collected: 03/22/17 14:42
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.01 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396905	03/29/17 16:17	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397183	03/30/17 18:49	VS	TAL IRV
SPLP West	Leach	1312			100.01 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396411	03/27/17 16:44	ZEM	TAL IRV
SPLP West	Analysis	6010B		1			396876	03/29/17 14:37	EN	TAL IRV

Lab Chronicle

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-1

Client Sample ID: DFSEP4-1
Lab Sample ID: 440-180360-10

Date Collected: 03/22/17 14:42
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			2.03 g	50 mL	395912	03/24/17 08:46	DT	TAL IRV
Total/NA	Analysis	6010B		5			396056	03/24/17 17:45	K1E	TAL IRV
SPLP West	Leach	1312			100.01 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396418	03/27/17 17:21	DB	TAL IRV
SPLP West	Analysis	7470A		1			396461	03/28/17 01:27	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:12	DB	TAL IRV
Total/NA	Prep	9010B			1.99 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:13	SN	TAL IRV
Soluble	Leach	DI Leach			19.99 g	20 mL	396006	03/24/17 14:39	RB	TAL IRV
Soluble	Analysis	9045C		1			396029	03/24/17 16:14	RB	TAL IRV

Client Sample ID: DFSEP4-3
Lab Sample ID: 440-180360-11

Date Collected: 03/22/17 14:43
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			99.99 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396905	03/29/17 16:17	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397183	03/30/17 19:00	VS	TAL IRV
SPLP West	Leach	1312			99.99 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396411	03/27/17 16:44	ZEM	TAL IRV
SPLP West	Analysis	6010B		1			396876	03/29/17 14:40	EN	TAL IRV
Total/NA	Prep	3050B			2.00 g	50 mL	395912	03/24/17 08:46	DT	TAL IRV
Total/NA	Analysis	6010B		5			396056	03/24/17 17:47	K1E	TAL IRV
SPLP West	Leach	1312			99.99 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396418	03/27/17 17:21	DB	TAL IRV
SPLP West	Analysis	7470A		1			396461	03/28/17 01:35	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:15	DB	TAL IRV
Total/NA	Prep	9010B			2.00 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:13	SN	TAL IRV
Soluble	Leach	DI Leach			20.03 g	20.00 mL	396012	03/24/17 15:22	RB	TAL IRV
Soluble	Analysis	9045C		1			396034	03/24/17 16:34	RB	TAL IRV

Client Sample ID: DFSEP5-1
Lab Sample ID: 440-180360-13

Date Collected: 03/22/17 14:55
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.01 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396411	03/27/17 16:44	ZEM	TAL IRV
SPLP West	Analysis	6010B		1			396876	03/29/17 14:42	EN	TAL IRV
Total/NA	Prep	3050B			2.00 g	50 mL	395912	03/24/17 08:46	DT	TAL IRV

Lab Chronicle

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-1

Client Sample ID: DFSEP5-1

Lab Sample ID: 440-180360-13

Date Collected: 03/22/17 14:55
Date Received: 03/23/17 09:45

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010B		5			396056	03/24/17 17:49	K1E	TAL IRV
SPLP West	Leach	1312			100.01 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396418	03/27/17 17:23	DB	TAL IRV
SPLP West	Analysis	7470A		1			396461	03/28/17 01:38	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:17	DB	TAL IRV
Total/NA	Prep	9010B			2.01 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:13	SN	TAL IRV
Soluble	Leach	DI Leach			20.01 g	20.00 mL	396012	03/24/17 15:22	RB	TAL IRV
Soluble	Analysis	9045C		1			396034	03/24/17 16:34	RB	TAL IRV

Client Sample ID: DFSEP5-3

Lab Sample ID: 440-180360-14

Date Collected: 03/22/17 14:56
Date Received: 03/23/17 09:45

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.01 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396411	03/27/17 16:44	ZEM	TAL IRV
SPLP West	Analysis	6010B		1			396876	03/29/17 14:44	EN	TAL IRV
Total/NA	Prep	3050B			2.03 g	50 mL	395912	03/24/17 08:46	DT	TAL IRV
Total/NA	Analysis	6010B		5			396056	03/24/17 17:51	K1E	TAL IRV
SPLP West	Leach	1312			100.01 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396418	03/27/17 17:23	DB	TAL IRV
SPLP West	Analysis	7470A		1			396461	03/28/17 01:40	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:20	DB	TAL IRV
Total/NA	Prep	9010B			1.98 g	50 mL	396367	03/27/17 14:31	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:13	SN	TAL IRV
Soluble	Leach	DI Leach			20.00 g	20.00 mL	396012	03/24/17 15:22	RB	TAL IRV
Soluble	Analysis	9045C		1			396034	03/24/17 16:34	RB	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-395912/1-A ^5
Matrix: Solid
Analysis Batch: 396056

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 395912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10	5.0	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Arsenic	ND		3.0	1.5	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Barium	ND		1.5	0.75	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Beryllium	ND		0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Cadmium	ND		0.50	0.25	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Chromium	ND		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Cobalt	ND		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Copper	ND		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Lead	ND		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Molybdenum	ND		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Nickel	ND		2.0	1.0	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Thallium	ND		10	5.0	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Vanadium	ND		1.0	0.50	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Zinc	ND		5.0	2.5	mg/Kg		03/24/17 08:46	03/24/17 16:53	5
Silver	ND		1.5	0.75	mg/Kg		03/24/17 08:46	03/24/17 16:53	5

Lab Sample ID: LCS 440-395912/2-A ^5
Matrix: Solid
Analysis Batch: 396056

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 395912

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	49.5	47.5		mg/Kg		96	80 - 120
Arsenic	49.5	46.1		mg/Kg		93	80 - 120
Barium	49.5	47.4		mg/Kg		96	80 - 120
Beryllium	49.5	45.6		mg/Kg		92	80 - 120
Cadmium	49.5	46.1		mg/Kg		93	80 - 120
Chromium	49.5	48.1		mg/Kg		97	80 - 120
Cobalt	49.5	47.4		mg/Kg		96	80 - 120
Copper	49.5	47.3		mg/Kg		96	80 - 120
Lead	49.5	48.4		mg/Kg		98	80 - 120
Molybdenum	49.5	49.8		mg/Kg		101	80 - 120
Nickel	49.5	47.6		mg/Kg		96	80 - 120
Selenium	49.5	42.1		mg/Kg		85	80 - 120
Thallium	49.5	47.5		mg/Kg		96	80 - 120
Vanadium	49.5	47.4		mg/Kg		96	80 - 120
Zinc	49.5	45.4		mg/Kg		92	80 - 120
Silver	24.8	22.9		mg/Kg		93	80 - 120

Lab Sample ID: 440-180304-E-1-F MSD ^5
Matrix: Solid
Analysis Batch: 396056

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 395912

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND	F1	49.5	33.5	F1	mg/Kg		68	75 - 125	1	20
Arsenic	8.0		49.5	57.5		mg/Kg		100	75 - 125	8	20
Barium	57		49.5	114		mg/Kg		117	75 - 125	8	20
Beryllium	0.57		49.5	47.3		mg/Kg		94	75 - 125	2	20

TestAmerica Irvine

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-180304-E-1-F MSD ^5
Matrix: Solid
Analysis Batch: 396056

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 395912

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.25	J	49.5	46.9		mg/Kg		94	75 - 125	2	20
Chromium	24		49.5	74.5		mg/Kg		101	75 - 125	5	20
Cobalt	6.9		49.5	56.7		mg/Kg		101	75 - 125	4	20
Copper	16		49.5	66.7		mg/Kg		102	75 - 125	3	20
Lead	8.5		49.5	56.3		mg/Kg		96	75 - 125	3	20
Molybdenum	ND		49.5	49.4		mg/Kg		100	75 - 125	2	20
Nickel	21		49.5	66.8		mg/Kg		93	75 - 125	5	20
Selenium	ND		49.5	43.3		mg/Kg		87	75 - 125	1	20
Thallium	ND		49.5	50.0		mg/Kg		101	75 - 125	4	20
Vanadium	38		49.5	94.9		mg/Kg		114	75 - 125	10	20
Zinc	51		49.5	96.6		mg/Kg		93	75 - 125	6	20
Silver	ND		24.8	24.0		mg/Kg		97	75 - 125	2	20

Lab Sample ID: 440-180304-E-1-G MS ^5
Matrix: Solid
Analysis Batch: 396056

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 395912

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	F1	49.5	33.7	F1	mg/Kg		68	75 - 125
Arsenic	8.0		49.5	53.0		mg/Kg		91	75 - 125
Barium	57		49.5	106		mg/Kg		99	75 - 125
Beryllium	0.57		49.5	46.2		mg/Kg		92	75 - 125
Cadmium	0.25	J	49.5	45.8		mg/Kg		92	75 - 125
Chromium	24		49.5	71.0		mg/Kg		94	75 - 125
Cobalt	6.9		49.5	54.6		mg/Kg		96	75 - 125
Copper	16		49.5	64.5		mg/Kg		97	75 - 125
Lead	8.5		49.5	54.9		mg/Kg		94	75 - 125
Molybdenum	ND		49.5	48.5		mg/Kg		98	75 - 125
Nickel	21		49.5	63.6		mg/Kg		87	75 - 125
Selenium	ND		49.5	42.8		mg/Kg		86	75 - 125
Thallium	ND		49.5	48.2		mg/Kg		97	75 - 125
Vanadium	38		49.5	85.9		mg/Kg		96	75 - 125
Zinc	51		49.5	90.6		mg/Kg		81	75 - 125
Silver	ND		24.8	23.4		mg/Kg		95	75 - 125

Lab Sample ID: MB 440-396391/1-A ^5
Matrix: Solid
Analysis Batch: 396588

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 396391

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	5.0	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Arsenic	ND		3.0	1.5	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Barium	ND		1.5	0.74	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Beryllium	ND		0.50	0.25	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Cadmium	ND		0.50	0.25	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Chromium	ND		0.99	0.50	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Cobalt	ND		0.99	0.50	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Copper	ND		2.0	0.99	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Lead	ND		2.0	0.99	mg/Kg		03/27/17 15:22	03/28/17 12:28	5

1 2 3 4 5 6 7 8 9 10 11 12 13

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 440-396391/1-A ^5
Matrix: Solid
Analysis Batch: 396588

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 396391

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		2.0	0.99	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Nickel	ND		2.0	0.99	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Selenium	ND		3.0	1.7	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Thallium	ND		9.9	5.0	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Vanadium	ND		0.99	0.50	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Zinc	ND		5.0	2.5	mg/Kg		03/27/17 15:22	03/28/17 12:28	5
Silver	ND		1.5	0.74	mg/Kg		03/27/17 15:22	03/28/17 12:28	5

Lab Sample ID: LCS 440-396391/2-A ^5
Matrix: Solid
Analysis Batch: 396588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 396391

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	49.3	48.3		mg/Kg		98	80 - 120
Arsenic	49.3	48.8		mg/Kg		99	80 - 120
Barium	49.3	47.2		mg/Kg		96	80 - 120
Beryllium	49.3	46.9		mg/Kg		95	80 - 120
Cadmium	49.3	46.8		mg/Kg		95	80 - 120
Chromium	49.3	46.7		mg/Kg		95	80 - 120
Cobalt	49.3	50.5		mg/Kg		103	80 - 120
Copper	49.3	46.1		mg/Kg		94	80 - 120
Lead	49.3	48.2		mg/Kg		98	80 - 120
Molybdenum	49.3	47.2		mg/Kg		96	80 - 120
Nickel	49.3	46.7		mg/Kg		95	80 - 120
Selenium	49.3	44.4		mg/Kg		90	80 - 120
Thallium	49.3	46.3		mg/Kg		94	80 - 120
Vanadium	49.3	46.8		mg/Kg		95	80 - 120
Zinc	49.3	45.2		mg/Kg		92	80 - 120
Silver	24.6	22.7		mg/Kg		92	80 - 120

Lab Sample ID: 440-180360-7 MS
Matrix: Solid
Analysis Batch: 396588

Client Sample ID: DFSEP3-1
Prep Type: Total/NA
Prep Batch: 396391

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	F1	49.3	16.0	F1	mg/Kg		33	75 - 125
Arsenic	8.6		49.3	57.9		mg/Kg		100	75 - 125
Barium	130	F1	49.3	190		mg/Kg		121	75 - 125
Beryllium	0.78		49.3	49.0		mg/Kg		98	75 - 125
Cadmium	0.54		49.3	49.0		mg/Kg		98	75 - 125
Chromium	31		49.3	83.0		mg/Kg		105	75 - 125
Cobalt	17		49.3	64.9		mg/Kg		98	75 - 125
Copper	38		49.3	91.2		mg/Kg		108	75 - 125
Lead	13		49.3	57.8		mg/Kg		91	75 - 125
Molybdenum	ND		49.3	43.7		mg/Kg		89	75 - 125
Nickel	22		49.3	70.3		mg/Kg		97	75 - 125
Selenium	ND		49.3	42.6		mg/Kg		86	75 - 125
Thallium	ND		49.3	50.1		mg/Kg		102	75 - 125
Vanadium	71	F1	49.3	132		mg/Kg		123	75 - 125

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-180360-7 MS
Matrix: Solid
Analysis Batch: 396588

Client Sample ID: DFSEP3-1
Prep Type: Total/NA
Prep Batch: 396391

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	77		49.3	125		mg/Kg		98	75 - 125
Silver	ND		24.6	24.7		mg/Kg		100	75 - 125

Lab Sample ID: 440-180360-7 MSD
Matrix: Solid
Analysis Batch: 396588

Client Sample ID: DFSEP3-1
Prep Type: Total/NA
Prep Batch: 396391

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND	F1	49.0	16.9	F1	mg/Kg		34	75 - 125	5	20
Arsenic	8.6		49.0	60.1		mg/Kg		105	75 - 125	4	20
Barium	130	F1	49.0	201	F1	mg/Kg		143	75 - 125	6	20
Beryllium	0.78		49.0	49.3		mg/Kg		99	75 - 125	1	20
Cadmium	0.54		49.0	49.8		mg/Kg		101	75 - 125	2	20
Chromium	31		49.0	85.7		mg/Kg		111	75 - 125	3	20
Cobalt	17		49.0	66.0		mg/Kg		101	75 - 125	2	20
Copper	38		49.0	94.9		mg/Kg		116	75 - 125	4	20
Lead	13		49.0	59.2		mg/Kg		94	75 - 125	2	20
Molybdenum	ND		49.0	44.8		mg/Kg		91	75 - 125	3	20
Nickel	22		49.0	71.6		mg/Kg		100	75 - 125	2	20
Selenium	ND		49.0	42.7		mg/Kg		87	75 - 125	0	20
Thallium	ND		49.0	52.1		mg/Kg		106	75 - 125	4	20
Vanadium	71	F1	49.0	138	F1	mg/Kg		137	75 - 125	5	20
Zinc	77		49.0	130		mg/Kg		108	75 - 125	4	20
Silver	ND		24.5	25.4		mg/Kg		104	75 - 125	3	20

Lab Sample ID: MB 440-396227/1-B
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396411

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:09	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:09	1
Barium	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:09	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:09	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Chromium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:09	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:09	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:09	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:09	1
Vanadium	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:09	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:09	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:09	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 440-396227/2-B
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: Lab Control Sample
Prep Type: SPLP West
Prep Batch: 396411

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	2.00	1.91		mg/L		96	80 - 120
Arsenic	2.00	1.87		mg/L		93	80 - 120
Barium	2.00	1.89		mg/L		95	80 - 120
Beryllium	2.00	1.86		mg/L		93	80 - 120
Cadmium	2.00	1.85		mg/L		93	80 - 120
Chromium	2.00	2.58	*	mg/L		129	80 - 120
Cobalt	2.00	2.02		mg/L		101	80 - 120
Copper	2.00	1.92		mg/L		96	80 - 120
Lead	2.00	1.90		mg/L		95	80 - 120
Molybdenum	2.00	1.89		mg/L		94	80 - 120
Nickel	2.00	2.34		mg/L		117	80 - 120
Selenium	2.00	1.75		mg/L		87	80 - 120
Thallium	2.00	1.92		mg/L		96	80 - 120
Vanadium	2.00	1.89		mg/L		95	80 - 120
Zinc	2.00	1.83		mg/L		92	80 - 120
Silver	1.00	0.982		mg/L		98	80 - 120

Lab Sample ID: 440-180360-1 MS
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: DFSEP1-1
Prep Type: SPLP West
Prep Batch: 396411

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		2.00	1.97		mg/L		98	75 - 125
Arsenic	ND		2.00	1.95		mg/L		97	75 - 125
Barium	ND		2.00	1.98		mg/L		99	75 - 125
Beryllium	ND		2.00	1.90		mg/L		95	75 - 125
Cadmium	ND		2.00	1.91		mg/L		96	75 - 125
Chromium	ND	*	2.00	2.06		mg/L		103	75 - 125
Cobalt	ND		2.00	2.05		mg/L		103	75 - 125
Copper	ND		2.00	2.01		mg/L		100	75 - 125
Lead	ND		2.00	1.97		mg/L		99	75 - 125
Molybdenum	ND		2.00	1.93		mg/L		96	75 - 125
Nickel	ND		2.00	2.05		mg/L		103	75 - 125
Selenium	ND		2.00	1.82		mg/L		91	75 - 125
Thallium	ND		2.00	1.95		mg/L		97	75 - 125
Vanadium	0.13	J	2.00	2.07		mg/L		97	75 - 125
Zinc	ND		2.00	1.89		mg/L		94	75 - 125
Silver	ND		1.00	1.02		mg/L		102	75 - 125

Lab Sample ID: 440-180360-1 MSD
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: DFSEP1-1
Prep Type: SPLP West
Prep Batch: 396411

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		2.00	2.00		mg/L		100	75 - 125	2	20
Arsenic	ND		2.00	1.98		mg/L		99	75 - 125	2	20
Barium	ND		2.00	1.97		mg/L		98	75 - 125	1	20
Beryllium	ND		2.00	1.89		mg/L		94	75 - 125	0	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-180360-1 MSD
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: DFSEP1-1
Prep Type: SPLP West
Prep Batch: 396411

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND		2.00	1.89		mg/L		95	75 - 125	1	20
Chromium	ND	*	2.00	2.15		mg/L		108	75 - 125	4	20
Cobalt	ND		2.00	2.05		mg/L		102	75 - 125	0	20
Copper	ND		2.00	1.99		mg/L		99	75 - 125	1	20
Lead	ND		2.00	1.96		mg/L		98	75 - 125	1	20
Molybdenum	ND		2.00	1.92		mg/L		96	75 - 125	0	20
Nickel	ND		2.00	2.10		mg/L		105	75 - 125	2	20
Selenium	ND		2.00	1.80		mg/L		90	75 - 125	1	20
Thallium	ND		2.00	1.94		mg/L		97	75 - 125	0	20
Vanadium	0.13	J	2.00	2.05		mg/L		96	75 - 125	1	20
Zinc	ND		2.00	1.87		mg/L		93	75 - 125	1	20
Silver	ND		1.00	1.01		mg/L		101	75 - 125	1	20

Lab Sample ID: MB 440-396227/1-D
Matrix: Solid
Analysis Batch: 397183

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396905

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.10	0.020	mg/L		03/29/17 16:17	03/30/17 18:44	1

Lab Sample ID: LCS 440-396227/2-D
Matrix: Solid
Analysis Batch: 397183

Client Sample ID: Lab Control Sample
Prep Type: SPLP West
Prep Batch: 396905

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	2.00	1.89		mg/L		94	80 - 120

Lab Sample ID: 440-180360-10 MS
Matrix: Solid
Analysis Batch: 397183

Client Sample ID: DFSEP4-1
Prep Type: SPLP West
Prep Batch: 396905

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	ND		2.00	1.88		mg/L		94	75 - 125

Lab Sample ID: 440-180360-10 MSD
Matrix: Solid
Analysis Batch: 397183

Client Sample ID: DFSEP4-1
Prep Type: SPLP West
Prep Batch: 396905

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	ND		2.00	1.90		mg/L		95	75 - 125	1	20

Lab Sample ID: MB 440-396703/1-B
Matrix: Solid
Analysis Batch: 397361

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396943

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0720	J	0.20	0.070	mg/L		03/29/17 19:52	03/31/17 14:20	1
Arsenic	ND		0.20	0.070	mg/L		03/29/17 19:52	03/31/17 14:20	1
Barium	ND		0.20	0.060	mg/L		03/29/17 19:52	03/31/17 14:20	1

QC Sample Results

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 440-396703/1-B
Matrix: Solid
Analysis Batch: 397361

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396943

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.080	0.010	mg/L		03/29/17 19:52	03/31/17 14:20	1
Cadmium	ND		0.10	0.020	mg/L		03/29/17 19:52	03/31/17 14:20	1
Chromium	ND		0.10	0.020	mg/L		03/29/17 19:52	03/31/17 14:20	1
Cobalt	ND		0.20	0.020	mg/L		03/29/17 19:52	03/31/17 14:20	1
Copper	ND		0.20	0.030	mg/L		03/29/17 19:52	03/31/17 14:20	1
Lead	ND		0.10	0.040	mg/L		03/29/17 19:52	03/31/17 14:20	1
Molybdenum	ND		0.40	0.020	mg/L		03/29/17 19:52	03/31/17 14:20	1
Nickel	ND		0.20	0.020	mg/L		03/29/17 19:52	03/31/17 14:20	1
Selenium	ND		0.10	0.080	mg/L		03/29/17 19:52	03/31/17 14:20	1
Thallium	ND		0.10	0.080	mg/L		03/29/17 19:52	03/31/17 14:20	1
Vanadium	ND		0.20	0.030	mg/L		03/29/17 19:52	03/31/17 14:20	1
Zinc	ND		0.40	0.060	mg/L		03/29/17 19:52	03/31/17 14:20	1
Silver	ND		0.20	0.060	mg/L		03/29/17 19:52	03/31/17 14:20	1

Lab Sample ID: LCS 440-396703/2-B
Matrix: Solid
Analysis Batch: 397361

Client Sample ID: Lab Control Sample
Prep Type: SPLP West
Prep Batch: 396943

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	2.00	1.90		mg/L		95	80 - 120
Arsenic	2.00	1.82		mg/L		91	80 - 120
Barium	2.00	1.89		mg/L		95	80 - 120
Beryllium	2.00	1.82		mg/L		91	80 - 120
Cadmium	2.00	1.83		mg/L		92	80 - 120
Chromium	2.00	1.99		mg/L		100	80 - 120
Cobalt	2.00	1.97		mg/L		98	80 - 120
Copper	2.00	1.90		mg/L		95	80 - 120
Lead	2.00	1.89		mg/L		95	80 - 120
Molybdenum	2.00	1.88		mg/L		94	80 - 120
Nickel	2.00	2.01		mg/L		101	80 - 120
Selenium	2.00	1.65		mg/L		83	80 - 120
Thallium	2.00	1.83		mg/L		92	80 - 120
Vanadium	2.00	1.89		mg/L		94	80 - 120
Zinc	2.00	1.78		mg/L		89	80 - 120
Silver	1.00	0.918		mg/L		92	80 - 120

Lab Sample ID: 440-180360-7 MS
Matrix: Solid
Analysis Batch: 397361

Client Sample ID: DFSEP3-1
Prep Type: SPLP West
Prep Batch: 396943

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.071	J B	2.00	2.01		mg/L		97	75 - 125
Arsenic	ND		2.00	1.94		mg/L		97	75 - 125
Barium	0.23		2.00	2.23		mg/L		100	75 - 125
Beryllium	ND		2.00	1.96		mg/L		98	75 - 125
Cadmium	ND		2.00	1.89		mg/L		95	75 - 125
Chromium	0.044	J	2.00	2.12		mg/L		104	75 - 125
Cobalt	ND		2.00	2.05		mg/L		102	75 - 125
Copper	0.063	J	2.00	2.09		mg/L		102	75 - 125

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-180360-7 MS
Matrix: Solid
Analysis Batch: 397361

Client Sample ID: DFSEP3-1
Prep Type: SPLP West
Prep Batch: 396943

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		2.00	2.00		mg/L		100	75 - 125
Molybdenum	ND		2.00	1.97		mg/L		99	75 - 125
Nickel	0.030	J	2.00	2.11		mg/L		104	75 - 125
Selenium	ND		2.00	1.65		mg/L		82	75 - 125
Thallium	ND		2.00	1.96		mg/L		98	75 - 125
Vanadium	0.13	J	2.00	2.09		mg/L		98	75 - 125
Zinc	0.086	J	2.00	1.99		mg/L		95	75 - 125
Silver	ND		1.00	0.967		mg/L		97	75 - 125

Lab Sample ID: 440-180360-7 MSD
Matrix: Solid
Analysis Batch: 397361

Client Sample ID: DFSEP3-1
Prep Type: SPLP West
Prep Batch: 396943

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.071	J B	2.00	1.93		mg/L		93	75 - 125	4	20
Arsenic	ND		2.00	1.81		mg/L		90	75 - 125	7	20
Barium	0.23		2.00	2.13		mg/L		95	75 - 125	4	20
Beryllium	ND		2.00	1.86		mg/L		93	75 - 125	6	20
Cadmium	ND		2.00	1.85		mg/L		92	75 - 125	2	20
Chromium	0.044	J	2.00	2.01		mg/L		98	75 - 125	5	20
Cobalt	ND		2.00	1.95		mg/L		97	75 - 125	5	20
Copper	0.063	J	2.00	2.02		mg/L		98	75 - 125	4	20
Lead	ND		2.00	1.86		mg/L		93	75 - 125	7	20
Molybdenum	ND		2.00	1.91		mg/L		96	75 - 125	3	20
Nickel	0.030	J	2.00	2.00		mg/L		98	75 - 125	5	20
Selenium	ND		2.00	1.60		mg/L		80	75 - 125	3	20
Thallium	ND		2.00	1.85		mg/L		92	75 - 125	6	20
Vanadium	0.13	J	2.00	2.04		mg/L		96	75 - 125	3	20
Zinc	0.086	J	2.00	1.91		mg/L		91	75 - 125	4	20
Silver	ND		1.00	0.934		mg/L		93	75 - 125	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 440-397742/1-A
Matrix: Solid
Analysis Batch: 397823

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 397742

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		04/03/17 15:42	04/03/17 20:52	1

Lab Sample ID: LCS 440-397742/2-A
Matrix: Solid
Analysis Batch: 397823

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 397742

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0800	0.0783		mg/L		98	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: MB 440-396227/1-C
Matrix: Solid
Analysis Batch: 396461

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396418

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:21	03/28/17 01:05	1

Lab Sample ID: LCS 440-396227/2-C
Matrix: Solid
Analysis Batch: 396461

Client Sample ID: Lab Control Sample
Prep Type: SPLP West
Prep Batch: 396418

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0800	0.0872		mg/L		109	80 - 120

Lab Sample ID: 440-180360-1 MS
Matrix: Solid
Analysis Batch: 396461

Client Sample ID: DFSEP1-1
Prep Type: SPLP West
Prep Batch: 396418

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0015	J	0.0800	0.0905		mg/L		111	70 - 130

Lab Sample ID: 440-180360-1 MSD
Matrix: Solid
Analysis Batch: 396461

Client Sample ID: DFSEP1-1
Prep Type: SPLP West
Prep Batch: 396418

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.0015	J	0.0800	0.0905		mg/L		111	70 - 130	0	20

Lab Sample ID: 440-180360-7 MS
Matrix: Solid
Analysis Batch: 397823

Client Sample ID: DFSEP3-1
Prep Type: SPLP West
Prep Batch: 397742

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.0800	0.0837		mg/L		105	70 - 130

Lab Sample ID: 440-180360-7 MSD
Matrix: Solid
Analysis Batch: 397823

Client Sample ID: DFSEP3-1
Prep Type: SPLP West
Prep Batch: 397742

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.0800	0.0826		mg/L		103	70 - 130	1	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 440-396446/1-A
Matrix: Solid
Analysis Batch: 396922

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 396446

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 18:28	1

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 440-396446/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 396922 — **Prep Batch: 396446**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.800	0.885		mg/Kg		111	80 - 120		

Lab Sample ID: 440-180360-1 MS — **Client Sample ID: DFSEP1-1**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 396922 — **Prep Batch: 396446**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.038		0.800	0.828		mg/Kg		99	70 - 130		

Lab Sample ID: 440-180360-1 MSD — **Client Sample ID: DFSEP1-1**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 396922 — **Prep Batch: 396446**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.038		0.800	0.849		mg/Kg		101	70 - 130	3	20

Method: 9014 - Cyanide

Lab Sample ID: MB 440-396367/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 396652 — **Prep Batch: 396367**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:31	03/28/17 17:11	1

Lab Sample ID: LCS 440-396367/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 396652 — **Prep Batch: 396367**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			5.00	4.77		mg/Kg		95	90 - 110		

Lab Sample ID: 440-180360-1 MS — **Client Sample ID: DFSEP1-1**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 396652 — **Prep Batch: 396367**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total	ND		5.05	4.76		mg/Kg		94	70 - 115		

Lab Sample ID: 440-180360-1 MSD — **Client Sample ID: DFSEP1-1**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 396652 — **Prep Batch: 396367**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		5.03	4.67		mg/Kg		93	70 - 115	2	15

QC Sample Results

Method: 9045C - pH

Lab Sample ID: 440-180360-1 DU
Matrix: Solid
Analysis Batch: 396029
Client Sample ID: DFSEP1-1
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.5		8.5		SU		0.2	2

Lab Sample ID: 440-180360-11 DU
Matrix: Solid
Analysis Batch: 396034
Client Sample ID: DFSEP4-3
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.4		8.5		SU		0.6	2

Lab Sample ID: 440-180320-A-9-L DU
Matrix: Solid
Analysis Batch: 396878
Client Sample ID: Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.5		7.5		SU		0.4	2

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-1

Metals

Prep Batch: 395912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	Total/NA	Solid	3050B	
440-180360-2	DFSEP1-3	Total/NA	Solid	3050B	
440-180360-4	DFSEP2-1	Total/NA	Solid	3050B	
440-180360-5	DFSEP2-3	Total/NA	Solid	3050B	
440-180360-10	DFSEP4-1	Total/NA	Solid	3050B	
440-180360-11	DFSEP4-3	Total/NA	Solid	3050B	
440-180360-13	DFSEP5-1	Total/NA	Solid	3050B	
440-180360-14	DFSEP5-3	Total/NA	Solid	3050B	
MB 440-395912/1-A ^5	Method Blank	Total/NA	Solid	3050B	
LCS 440-395912/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
440-180304-E-1-F MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	3050B	
440-180304-E-1-G MS ^5	Matrix Spike	Total/NA	Solid	3050B	

Analysis Batch: 396056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	Total/NA	Solid	6010B	395912
440-180360-2	DFSEP1-3	Total/NA	Solid	6010B	395912
440-180360-4	DFSEP2-1	Total/NA	Solid	6010B	395912
440-180360-5	DFSEP2-3	Total/NA	Solid	6010B	395912
440-180360-10	DFSEP4-1	Total/NA	Solid	6010B	395912
440-180360-11	DFSEP4-3	Total/NA	Solid	6010B	395912
440-180360-13	DFSEP5-1	Total/NA	Solid	6010B	395912
440-180360-14	DFSEP5-3	Total/NA	Solid	6010B	395912
MB 440-395912/1-A ^5	Method Blank	Total/NA	Solid	6010B	395912
LCS 440-395912/2-A ^5	Lab Control Sample	Total/NA	Solid	6010B	395912
440-180304-E-1-F MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	6010B	395912
440-180304-E-1-G MS ^5	Matrix Spike	Total/NA	Solid	6010B	395912

Leach Batch: 396227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	SPLP West	Solid	1312	
440-180360-2	DFSEP1-3	SPLP West	Solid	1312	
440-180360-4	DFSEP2-1	SPLP West	Solid	1312	
440-180360-5	DFSEP2-3	SPLP West	Solid	1312	
440-180360-10	DFSEP4-1	SPLP West	Solid	1312	
440-180360-11	DFSEP4-3	SPLP West	Solid	1312	
440-180360-13	DFSEP5-1	SPLP West	Solid	1312	
440-180360-14	DFSEP5-3	SPLP West	Solid	1312	
MB 440-396227/1-B	Method Blank	SPLP West	Solid	1312	
MB 440-396227/1-C	Method Blank	SPLP West	Solid	1312	
MB 440-396227/1-D	Method Blank	SPLP West	Solid	1312	
LCS 440-396227/2-B	Lab Control Sample	SPLP West	Solid	1312	
LCS 440-396227/2-C	Lab Control Sample	SPLP West	Solid	1312	
LCS 440-396227/2-D	Lab Control Sample	SPLP West	Solid	1312	
440-180360-1 MS	DFSEP1-1	SPLP West	Solid	1312	
440-180360-1 MSD	DFSEP1-1	SPLP West	Solid	1312	
440-180360-10 MS	DFSEP4-1	SPLP West	Solid	1312	
440-180360-10 MSD	DFSEP4-1	SPLP West	Solid	1312	

Metals (Continued)

Prep Batch: 396391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	Total/NA	Solid	3050B	
440-180360-8	DFSEP3-3	Total/NA	Solid	3050B	
MB 440-396391/1-A ^5	Method Blank	Total/NA	Solid	3050B	
LCS 440-396391/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
440-180360-7 MS	DFSEP3-1	Total/NA	Solid	3050B	
440-180360-7 MSD	DFSEP3-1	Total/NA	Solid	3050B	

Prep Batch: 396411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	SPLP West	Solid	3010A	396227
440-180360-2	DFSEP1-3	SPLP West	Solid	3010A	396227
440-180360-4	DFSEP2-1	SPLP West	Solid	3010A	396227
440-180360-5	DFSEP2-3	SPLP West	Solid	3010A	396227
440-180360-10	DFSEP4-1	SPLP West	Solid	3010A	396227
440-180360-11	DFSEP4-3	SPLP West	Solid	3010A	396227
440-180360-13	DFSEP5-1	SPLP West	Solid	3010A	396227
440-180360-14	DFSEP5-3	SPLP West	Solid	3010A	396227
MB 440-396227/1-B	Method Blank	SPLP West	Solid	3010A	396227
LCS 440-396227/2-B	Lab Control Sample	SPLP West	Solid	3010A	396227
440-180360-1 MS	DFSEP1-1	SPLP West	Solid	3010A	396227
440-180360-1 MSD	DFSEP1-1	SPLP West	Solid	3010A	396227

Prep Batch: 396418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	SPLP West	Solid	7470A	396227
440-180360-2	DFSEP1-3	SPLP West	Solid	7470A	396227
440-180360-4	DFSEP2-1	SPLP West	Solid	7470A	396227
440-180360-5	DFSEP2-3	SPLP West	Solid	7470A	396227
440-180360-10	DFSEP4-1	SPLP West	Solid	7470A	396227
440-180360-11	DFSEP4-3	SPLP West	Solid	7470A	396227
440-180360-13	DFSEP5-1	SPLP West	Solid	7470A	396227
440-180360-14	DFSEP5-3	SPLP West	Solid	7470A	396227
MB 440-396227/1-C	Method Blank	SPLP West	Solid	7470A	396227
LCS 440-396227/2-C	Lab Control Sample	SPLP West	Solid	7470A	396227
440-180360-1 MS	DFSEP1-1	SPLP West	Solid	7470A	396227
440-180360-1 MSD	DFSEP1-1	SPLP West	Solid	7470A	396227

Prep Batch: 396446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	Total/NA	Solid	7471A	
440-180360-2	DFSEP1-3	Total/NA	Solid	7471A	
440-180360-4	DFSEP2-1	Total/NA	Solid	7471A	
440-180360-5	DFSEP2-3	Total/NA	Solid	7471A	
440-180360-7	DFSEP3-1	Total/NA	Solid	7471A	
440-180360-8	DFSEP3-3	Total/NA	Solid	7471A	
440-180360-10	DFSEP4-1	Total/NA	Solid	7471A	
440-180360-11	DFSEP4-3	Total/NA	Solid	7471A	
440-180360-13	DFSEP5-1	Total/NA	Solid	7471A	
440-180360-14	DFSEP5-3	Total/NA	Solid	7471A	
MB 440-396446/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 440-396446/2-A	Lab Control Sample	Total/NA	Solid	7471A	

Metals (Continued)

Prep Batch: 396446 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1 MS	DFSEP1-1	Total/NA	Solid	7471A	
440-180360-1 MSD	DFSEP1-1	Total/NA	Solid	7471A	

Analysis Batch: 396461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	SPLP West	Solid	7470A	396418
440-180360-2	DFSEP1-3	SPLP West	Solid	7470A	396418
440-180360-4	DFSEP2-1	SPLP West	Solid	7470A	396418
440-180360-5	DFSEP2-3	SPLP West	Solid	7470A	396418
440-180360-10	DFSEP4-1	SPLP West	Solid	7470A	396418
440-180360-11	DFSEP4-3	SPLP West	Solid	7470A	396418
440-180360-13	DFSEP5-1	SPLP West	Solid	7470A	396418
440-180360-14	DFSEP5-3	SPLP West	Solid	7470A	396418
MB 440-396227/1-C	Method Blank	SPLP West	Solid	7470A	396418
LCS 440-396227/2-C	Lab Control Sample	SPLP West	Solid	7470A	396418
440-180360-1 MS	DFSEP1-1	SPLP West	Solid	7470A	396418
440-180360-1 MSD	DFSEP1-1	SPLP West	Solid	7470A	396418

Analysis Batch: 396588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	Total/NA	Solid	6010B	396391
440-180360-8	DFSEP3-3	Total/NA	Solid	6010B	396391
MB 440-396391/1-A ^5	Method Blank	Total/NA	Solid	6010B	396391
LCS 440-396391/2-A ^5	Lab Control Sample	Total/NA	Solid	6010B	396391
440-180360-7 MS	DFSEP3-1	Total/NA	Solid	6010B	396391
440-180360-7 MSD	DFSEP3-1	Total/NA	Solid	6010B	396391

Leach Batch: 396703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	SPLP West	Solid	1312	
440-180360-8	DFSEP3-3	SPLP West	Solid	1312	
MB 440-396703/1-B	Method Blank	SPLP West	Solid	1312	
LCS 440-396703/2-B	Lab Control Sample	SPLP West	Solid	1312	
440-180360-7 MS	DFSEP3-1	SPLP West	Solid	1312	
440-180360-7 MSD	DFSEP3-1	SPLP West	Solid	1312	

Analysis Batch: 396876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	SPLP West	Solid	6010B	396411
440-180360-2	DFSEP1-3	SPLP West	Solid	6010B	396411
440-180360-4	DFSEP2-1	SPLP West	Solid	6010B	396411
440-180360-5	DFSEP2-3	SPLP West	Solid	6010B	396411
440-180360-10	DFSEP4-1	SPLP West	Solid	6010B	396411
440-180360-11	DFSEP4-3	SPLP West	Solid	6010B	396411
440-180360-13	DFSEP5-1	SPLP West	Solid	6010B	396411
440-180360-14	DFSEP5-3	SPLP West	Solid	6010B	396411
MB 440-396227/1-B	Method Blank	SPLP West	Solid	6010B	396411
LCS 440-396227/2-B	Lab Control Sample	SPLP West	Solid	6010B	396411
440-180360-1 MS	DFSEP1-1	SPLP West	Solid	6010B	396411
440-180360-1 MSD	DFSEP1-1	SPLP West	Solid	6010B	396411

Metals (Continued)

Prep Batch: 396905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-4	DFSEP2-1	SPLP West	Solid	3010A	396227
440-180360-10	DFSEP4-1	SPLP West	Solid	3010A	396227
440-180360-11	DFSEP4-3	SPLP West	Solid	3010A	396227
MB 440-396227/1-D	Method Blank	SPLP West	Solid	3010A	396227
LCS 440-396227/2-D	Lab Control Sample	SPLP West	Solid	3010A	396227
440-180360-10 MS	DFSEP4-1	SPLP West	Solid	3010A	396227
440-180360-10 MSD	DFSEP4-1	SPLP West	Solid	3010A	396227

Analysis Batch: 396922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	Total/NA	Solid	7471A	396446
440-180360-2	DFSEP1-3	Total/NA	Solid	7471A	396446
440-180360-4	DFSEP2-1	Total/NA	Solid	7471A	396446
440-180360-5	DFSEP2-3	Total/NA	Solid	7471A	396446
440-180360-7	DFSEP3-1	Total/NA	Solid	7471A	396446
440-180360-8	DFSEP3-3	Total/NA	Solid	7471A	396446
440-180360-10	DFSEP4-1	Total/NA	Solid	7471A	396446
440-180360-11	DFSEP4-3	Total/NA	Solid	7471A	396446
440-180360-13	DFSEP5-1	Total/NA	Solid	7471A	396446
440-180360-14	DFSEP5-3	Total/NA	Solid	7471A	396446
MB 440-396446/1-A	Method Blank	Total/NA	Solid	7471A	396446
LCS 440-396446/2-A	Lab Control Sample	Total/NA	Solid	7471A	396446
440-180360-1 MS	DFSEP1-1	Total/NA	Solid	7471A	396446
440-180360-1 MSD	DFSEP1-1	Total/NA	Solid	7471A	396446

Prep Batch: 396943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	SPLP West	Solid	3010A	396703
440-180360-8	DFSEP3-3	SPLP West	Solid	3010A	396703
MB 440-396703/1-B	Method Blank	SPLP West	Solid	3010A	396703
LCS 440-396703/2-B	Lab Control Sample	SPLP West	Solid	3010A	396703
440-180360-7 MS	DFSEP3-1	SPLP West	Solid	3010A	396703
440-180360-7 MSD	DFSEP3-1	SPLP West	Solid	3010A	396703

Analysis Batch: 397175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	SPLP West	Solid	6010B	396943

Analysis Batch: 397183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-4	DFSEP2-1	SPLP West	Solid	6010B	396905
440-180360-10	DFSEP4-1	SPLP West	Solid	6010B	396905
440-180360-11	DFSEP4-3	SPLP West	Solid	6010B	396905
MB 440-396227/1-D	Method Blank	SPLP West	Solid	6010B	396905
LCS 440-396227/2-D	Lab Control Sample	SPLP West	Solid	6010B	396905
440-180360-10 MS	DFSEP4-1	SPLP West	Solid	6010B	396905
440-180360-10 MSD	DFSEP4-1	SPLP West	Solid	6010B	396905

Analysis Batch: 397361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	SPLP West	Solid	6010B	396943

Metals (Continued)

Analysis Batch: 397361 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-8	DFSEP3-3	SPLP West	Solid	6010B	396943
MB 440-396703/1-B	Method Blank	SPLP West	Solid	6010B	396943
LCS 440-396703/2-B	Lab Control Sample	SPLP West	Solid	6010B	396943
440-180360-7 MS	DFSEP3-1	SPLP West	Solid	6010B	396943
440-180360-7 MSD	DFSEP3-1	SPLP West	Solid	6010B	396943

Prep Batch: 397742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	SPLP West	Solid	7470A	396703
440-180360-8	DFSEP3-3	SPLP West	Solid	7470A	396703
MB 440-397742/1-A	Method Blank	Total/NA	Solid	7470A	
LCS 440-397742/2-A	Lab Control Sample	Total/NA	Solid	7470A	
440-180360-7 MS	DFSEP3-1	SPLP West	Solid	7470A	396703
440-180360-7 MSD	DFSEP3-1	SPLP West	Solid	7470A	396703

Analysis Batch: 397823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	SPLP West	Solid	7470A	397742
440-180360-8	DFSEP3-3	SPLP West	Solid	7470A	397742
MB 440-397742/1-A	Method Blank	Total/NA	Solid	7470A	397742
LCS 440-397742/2-A	Lab Control Sample	Total/NA	Solid	7470A	397742
440-180360-7 MS	DFSEP3-1	SPLP West	Solid	7470A	397742
440-180360-7 MSD	DFSEP3-1	SPLP West	Solid	7470A	397742

General Chemistry

Leach Batch: 396006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	Soluble	Solid	DI Leach	
440-180360-2	DFSEP1-3	Soluble	Solid	DI Leach	
440-180360-4	DFSEP2-1	Soluble	Solid	DI Leach	
440-180360-5	DFSEP2-3	Soluble	Solid	DI Leach	
440-180360-10	DFSEP4-1	Soluble	Solid	DI Leach	
440-180360-1 DU	DFSEP1-1	Soluble	Solid	DI Leach	

Leach Batch: 396012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-11	DFSEP4-3	Soluble	Solid	DI Leach	
440-180360-13	DFSEP5-1	Soluble	Solid	DI Leach	
440-180360-14	DFSEP5-3	Soluble	Solid	DI Leach	
440-180360-11 DU	DFSEP4-3	Soluble	Solid	DI Leach	

Analysis Batch: 396029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	Soluble	Solid	9045C	396006
440-180360-2	DFSEP1-3	Soluble	Solid	9045C	396006
440-180360-4	DFSEP2-1	Soluble	Solid	9045C	396006
440-180360-5	DFSEP2-3	Soluble	Solid	9045C	396006
440-180360-10	DFSEP4-1	Soluble	Solid	9045C	396006
440-180360-1 DU	DFSEP1-1	Soluble	Solid	9045C	396006

General Chemistry (Continued)

Analysis Batch: 396034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-11	DFSEP4-3	Soluble	Solid	9045C	396012
440-180360-13	DFSEP5-1	Soluble	Solid	9045C	396012
440-180360-14	DFSEP5-3	Soluble	Solid	9045C	396012
440-180360-11 DU	DFSEP4-3	Soluble	Solid	9045C	396012

Prep Batch: 396367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	Total/NA	Solid	9010B	
440-180360-2	DFSEP1-3	Total/NA	Solid	9010B	
440-180360-4	DFSEP2-1	Total/NA	Solid	9010B	
440-180360-5	DFSEP2-3	Total/NA	Solid	9010B	
440-180360-7	DFSEP3-1	Total/NA	Solid	9010B	
440-180360-8	DFSEP3-3	Total/NA	Solid	9010B	
440-180360-10	DFSEP4-1	Total/NA	Solid	9010B	
440-180360-11	DFSEP4-3	Total/NA	Solid	9010B	
440-180360-13	DFSEP5-1	Total/NA	Solid	9010B	
440-180360-14	DFSEP5-3	Total/NA	Solid	9010B	
MB 440-396367/1-A	Method Blank	Total/NA	Solid	9010B	
LCS 440-396367/2-A	Lab Control Sample	Total/NA	Solid	9010B	
440-180360-1 MS	DFSEP1-1	Total/NA	Solid	9010B	
440-180360-1 MSD	DFSEP1-1	Total/NA	Solid	9010B	

Analysis Batch: 396652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-1	DFSEP1-1	Total/NA	Solid	9014	396367
440-180360-2	DFSEP1-3	Total/NA	Solid	9014	396367
440-180360-4	DFSEP2-1	Total/NA	Solid	9014	396367
440-180360-5	DFSEP2-3	Total/NA	Solid	9014	396367
440-180360-7	DFSEP3-1	Total/NA	Solid	9014	396367
440-180360-8	DFSEP3-3	Total/NA	Solid	9014	396367
440-180360-10	DFSEP4-1	Total/NA	Solid	9014	396367
440-180360-11	DFSEP4-3	Total/NA	Solid	9014	396367
440-180360-13	DFSEP5-1	Total/NA	Solid	9014	396367
440-180360-14	DFSEP5-3	Total/NA	Solid	9014	396367
MB 440-396367/1-A	Method Blank	Total/NA	Solid	9014	396367
LCS 440-396367/2-A	Lab Control Sample	Total/NA	Solid	9014	396367
440-180360-1 MS	DFSEP1-1	Total/NA	Solid	9014	396367
440-180360-1 MSD	DFSEP1-1	Total/NA	Solid	9014	396367

Leach Batch: 396838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	Soluble	Solid	DI Leach	
440-180360-8	DFSEP3-3	Soluble	Solid	DI Leach	
440-180320-A-9-L DU	Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 396878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-7	DFSEP3-1	Soluble	Solid	9045C	396838
440-180360-8	DFSEP3-3	Soluble	Solid	9045C	396838
440-180320-A-9-L DU	Duplicate	Soluble	Solid	9045C	396838

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-1

Laboratory: TestAmerica Irvine

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	06-30-18
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 17-003R	01-23-18
Hawaii	State Program	9	N/A	01-29-18
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-18
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Mouton, Alain

From: Nicole Peacock <npeacock@dudek.com>
Sent: Monday, March 27, 2017 2:42 PM
To: Mouton, Alain; Susan Smith
Cc: Roberts, Danielle C.
Subject: RE: TestAmerica Sample Login Confirmation files from 440-180360 Dodge Flat

Thanks. Yes, those 2 samples should be analyzed for the same 4 analyses noted for the other samples.

From: Mouton, Alain [mailto:alain.mouton@testamericainc.com]
Sent: Monday, March 27, 2017 12:51 PM
To: Keith Blackmon; Nicole Peacock
Cc: Danielle C. Roberts
Subject: TestAmerica Sample Login Confirmation files from 440-180360 Dodge Flat

Hello,

Attached, please find the Sample Confirmation files for job 440-180360; Dodge Flat.

Containers were received for samples DFSEP3-1 (440-180360-7) and DFSEP3-3 (440-180360-8); however, on the COC, no analysis is requested for these two samples and they are not requested on Hold. We went ahead and logged in the same analyses requested for the other samples. Please let us know if you want to cancel these analyses for these two samples.

Please feel free to contact your PM, Danielle Roberts, if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback

ALAIN MOUTON
Project Management Assistant I

TestAmerica Irvine
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 949.261,1022

Reference: [368167]
Attachments: 2

Test America

SilverState Analytical Laboratories · Sierra Environmental Monitoring · EnviroTech

ssalabs.com sem-analytical.com envirotechonline.com

☐ 3626 E. SUNSET RD., STE 100, LAS VEGAS, NV 89120
Phone (702) 873-4478 Fax: (702) 873-7967 (EPA#: NV00930, CA2885)

☐ 1135 FINANCIAL BOULEVARD, RENO, NV 89502
Phone (775) 857-2400 Fax: (888) 398-7002 (EPA#: NV00015, CA2526)

CHAIN-OF-CUSTODY-RECORD

Page 1 of 2

Report Results To:
Report Attention: Nicole Peacock   Project Number: Dodge Flat
Company: DUDEK
Mailing Address: 605 Third St
City, State, Zip: Encinitas, CA 92024
Phone: 760-479-4152   Email / Fax: npeacock@dudek.com

Send Invoice To:
Invoice Attention: Nicole Peacock   PO#   Quote #
Company: Dudek
Mailing Address: Same
City, State, Zip:
Phone: Email / Fax:

440-180360 Chain of Custody

COMPLIANCE MONITORING? Yes ☐ No ☐
NEW ADDRESS? Results ☐ Invoice ☐

Applicable Program
SDWA ☐ CWA ☐ RCRA ☐
Mining ☐ Other ______

QC Level Report
I II III IV
NOTE Surcharges apply to Level II, III and IV reports

Send Results Via: Mail ☐ Email ☐ Fax ☐

Send Invoice Via: Mail ☐ Email ☐ Fax ☐

Field Measurements
On-Site pH: Chlorine:
Temperature: Other:

Sampled by: Susan Smith   Signature: [signature]

I attest to the validity and authenticity of the sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time is considered fraud and may be grounds for legal action.

Standard: ☒ ~~Standard TAT 7-10 Business Days.~~ Note that some tests vary.
Rush
Same Day: ☐ 3 Day: ☐ Other (specify): ______
1 Day: ☐ 4 Day: ☐ **Rush results will be issued after 4:00 p.m.**
2 Day: ☐ ~~5 Day:~~ X
NOTE: A Rush Surcharge is applied for rush samples

Other Pertinent Information / Special Instructions

ANALYSES REQ

Date Sampled	Time Sampled	Sample Identification	SSAL - SEM Lab No.	Comp. Grab	Matrix*	Preservative**	Number / Type of Containers***	Title 22 metals	SPLP metals	Total cyanide	pH	HOLD	Comments
3/22/17	1325	DFSEP1-1			SS	6	1	X	X	X	X		~~Metals~~ Acetate liner
	1326	DFSEP1-3			SS	6	1	X	X	X	X		
	1327	DFSEP1-5			SS	6	1					X	
	1339	DFSEP2-1			SS	6	1	X	X	X	X		
	1340	DFSEP2-3			SS	6	1	X	X	X	X		COMMENTS:
	1341	DFSEP2-5			SS	6	1					X	
	1415	DFSEP3-1			SS	6	1						
3/22/17	1416	DFSEP3-3			SS	6	1						Acetate liner

	Signature	Print Name	Company	Date	Time
Relinquished By:	[signature]	Susan Smith	Dudek	3/22/17	5:00pm
Received By:	FedEx				
Relinquished By:					
Received By:					
Relinquished By:					
Received By:	Olga Ornelas	Olga Ornelas	TAI	3/23/17	9:45
Authorized By:					

Authorization is required to process samples. This obligates your organization for service fees. SSAL Standard T & C's or other written agreement applies. If collections or legal services are required to recover said fees, your organization will be responsible for all fees and costs in addition to service fees

Samples are discarded 30 days after results are reported unless other arrangements are made and storage fees may apply. The analytical results associated with this COC apply only to these samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.

Matrix* DW-Drinking Water, WW-Waste Water, GW-Ground Water, SW-Surface Water, SS-Soil, S-Solid, OT-Other
Preservative** 1=H_2SO_4, 2=HNO_3, 3=HCl, 4=NaOH, 5=$Na_2S_2O_3$, 6=None, 7=Other

2.9°C/2.6°C IR-77
Container*** P-Plastic, G-Glass, V-Voa Vial, OT-Other

T#: 7859 9884 9233

Test America

SilverState Analytical Laboratories — Sierra Environmental Monitoring — EnviroTech

Danielle Roberts

ssalabs.com sem-analytical.com envirotechonline.com

☐ 3626 E. SUNSET RD., STE 100, LAS VEGAS, NV 89120
Phone (702) 873-4478 Fax: (702) 873-7967 (EPA#: NV00930, CA2885)

■ 1135 FINANCIAL BOULEVARD, RENO, NV 89502
Phone (775) 857-2400 Fax: (888) 398-7002 (EPA#: NV00015, CA2526)

CHAIN-OF-CUSTODY-RECORD

Report Results To:
Report Attention: Nicole Peacock — Project Number:
Company: Dudek
Mailing Address:
City, State, Zip: Same
Phone: Same — Email / Fax:

Send Invoice To:
Invoice Attention: — PO# — Quote #
Company:
Mailing Address:
City, State, Zip: Same
Phone: — Email / Fax:

COMPLIANCE MONITORING? Yes ☐ No ☐ — NEW ADDRESS? Results: ☐ Invoice: ☐

Applicable Program: SDWA ☐ CWA ☐ RCRA ☐ Mining ☐ Other ______

QC Level Report: I II III IV
NOTE: Surcharges apply to Level II, III and IV reports

Send Results Via: Mail: ☐ Email: ☐ Fax: ☐

Send Invoice Via: Mail: ☐ Email: ☐ Fax: ☐

Field Measurements: On-Site pH: — Chlorine: — Temperature: — Other:

Sampled by: Susan Smith — Signature: [signature]

I attest to the validity and authenticity of the sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time is considered fraud and may be grounds for legal action.

Standard: ☒ ~~Standard TAT 7-10 Business Days. Note that some tests vary.~~
Rush
☐ Same Day: ☐ 3 Day: ☐ Other (specify): ______
☐ 1 Day: ☐ 4 Day:
☐ 2 Day: ☒ 5 Day:
Rush results will be issued after 4:00 p.m.
NOTE: A Rush Surcharge is applied for rush samples

Other Pertinent Information / Special Instructions

ANALYSES REQUESTED

Date Sampled	Time Sampled	Sample Identification	SSAL - SEM Lab No.	Comp. Grab	Matrix*	Preservative**	Number / Type of Containers***	Title 22 Metals	SPLP Metals	Total cyanide	pH							Hold	Metals: / COMMENTS:
3/22/17	1417	DFSEP3-5			SS	6	1											X	Acetate liner
	1442	DFSEP4-1				6	1	X	X	X	X								
	1443	DFSEP4-3				6	1	X	X	X	X								
	1444	DFSEP4-5				6	1											X	
	1455	DFSEP5-1				6	1	X	X	X	X								
	1456	DFSEP5-3				6	1	X	X	X	X								
3/22/17	1457	DFSEP5-5			SS	6	1											X	Acetate liner

	Signature	Print Name	Company	Date	Time
Relinquished By:	[signature]	Susan Smith	Dudek	3/22/17	5:00pm
Received By:	FedEx				
Relinquished By:					
Received By:					
Relinquished By:					
Received By:	Olga Ornelas	Olga Ornelas	TAZ	3/23/17	9:45
Authorized By:					

Authorization is required to process samples. This obligates your organization for service fees. SSAL Standard T & C's or other written agreement applies. If collections or legal services are required to recover said fees, your organization will be responsible for all fees and costs in addition to service fees.

Samples are discarded 30 days after results are reported unless other arrangements are made and storage fees may apply. The analytical results associated with this COC apply only to these samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.

Matrix* DW-Drinking Water, WW-Waste Water, GW-Ground Water, SW-Surface Water, SS-Soil, S-Solid, OT-Other
Preservative** 1=H_2SO_4, 2=HNO_3, 3=HCl, 4=NaOH, 5=$Na_2S_2O_3$, 6=None, 7=Other
Container*** P-Plastic, G-Glass, V-Voa Vial, OT-Other

Login Sample Receipt Checklist

Client: Dudek & Associates

Job Number: 440-180360-1

Login Number: 180360
List Number: 1
Creator: Garcia, Veronica G

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-180371-1
Client Project/Site: Dodge Flat

For:
Dudek & Associates
750 Second Street
Encinitas, California 92024

Attn: Nicole Peacock

Authorized for release by:
4/4/2017 11:47:42 AM

Danielle Roberts, Senior Project Manager
(949)261-1022
danielle.roberts@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-180371-1	DFSEP6-1	Solid	03/22/17 15:13	03/23/17 09:45
440-180371-2	DFSEP6-3	Solid	03/22/17 15:14	03/23/17 09:45
440-180371-4	DFSEP7-1	Solid	03/22/17 15:45	03/23/17 09:45
440-180371-5	DFSEP7-3	Solid	03/22/17 15:46	03/23/17 09:45
440-180371-7	DFSEP8-1	Solid	03/22/17 16:05	03/23/17 09:45
440-180371-8	DFSEP8-3	Solid	03/22/17 16:06	03/23/17 09:45

Job ID: 440-180371-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-180371-1

Comments
No additional comments.

Receipt
The samples were received on 3/23/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

Metals
Method(s) 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-395913 and analytical batch 440-396060 were outside control limits for Antimony. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6010B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 440-396227 and 440-396411 and analytical batch 440-396876 recovered outside control limits for the following analytes: Chromium. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.DFSEP6-1 (440-180371-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: DFSEP6-1 — Lab Sample ID: 440-180371-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	10		3.0	1.5	mg/Kg	5		6010B	Total/NA
Barium	130		1.5	0.75	mg/Kg	5		6010B	Total/NA
Beryllium	0.74		0.50	0.25	mg/Kg	5		6010B	Total/NA
Cadmium	0.36	J	0.50	0.25	mg/Kg	5		6010B	Total/NA
Chromium	43		1.0	0.50	mg/Kg	5		6010B	Total/NA
Cobalt	18		1.0	0.50	mg/Kg	5		6010B	Total/NA
Copper	41		2.0	1.0	mg/Kg	5		6010B	Total/NA
Lead	14		2.0	1.0	mg/Kg	5		6010B	Total/NA
Nickel	25		2.0	1.0	mg/Kg	5		6010B	Total/NA
Thallium	5.4	J	10	5.0	mg/Kg	5		6010B	Total/NA
Vanadium	79		1.0	0.50	mg/Kg	5		6010B	Total/NA
Zinc	78		5.0	2.5	mg/Kg	5		6010B	Total/NA
Silver	0.77	J	1.5	0.75	mg/Kg	5		6010B	Total/NA
Vanadium	0.058	J	0.20	0.030	mg/L	1		6010B	SPLP West
Mercury	0.067		0.020	0.012	mg/Kg	1		7471A	Total/NA
pH	8.2		0.1	0.1	SU	1		9045C	Soluble

Client Sample ID: DFSEP6-3 — Lab Sample ID: 440-180371-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	8.9		3.0	1.5	mg/Kg	5		6010B	Total/NA
Barium	140		1.5	0.74	mg/Kg	5		6010B	Total/NA
Beryllium	0.74		0.50	0.25	mg/Kg	5		6010B	Total/NA
Cadmium	0.44	J	0.50	0.25	mg/Kg	5		6010B	Total/NA
Chromium	36		0.99	0.50	mg/Kg	5		6010B	Total/NA
Cobalt	16		0.99	0.50	mg/Kg	5		6010B	Total/NA
Copper	37		2.0	0.99	mg/Kg	5		6010B	Total/NA
Lead	8.3		2.0	0.99	mg/Kg	5		6010B	Total/NA
Nickel	24		2.0	0.99	mg/Kg	5		6010B	Total/NA
Thallium	7.2	J	9.9	5.0	mg/Kg	5		6010B	Total/NA
Vanadium	83		0.99	0.50	mg/Kg	5		6010B	Total/NA
Zinc	82		5.0	2.5	mg/Kg	5		6010B	Total/NA
Barium	0.069	J	0.20	0.060	mg/L	1		6010B	SPLP West
Copper	0.053	J B	0.20	0.030	mg/L	1		6010B	SPLP West
Lead	0.048	J B	0.10	0.040	mg/L	1		6010B	SPLP West
Selenium	0.083	J	0.10	0.080	mg/L	1		6010B	SPLP West
Vanadium	0.058	J	0.20	0.030	mg/L	1		6010B	SPLP West
Mercury	0.0013	J	0.0020	0.0010	mg/L	1		7470A	SPLP West
Mercury	0.043		0.020	0.012	mg/Kg	1		7471A	Total/NA
pH	8.2		0.1	0.1	SU	1		9045C	Soluble

Client Sample ID: DFSEP7-1 — Lab Sample ID: 440-180371-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	14		3.0	1.5	mg/Kg	5		6010B	Total/NA
Barium	160		1.5	0.74	mg/Kg	5		6010B	Total/NA
Beryllium	0.72		0.50	0.25	mg/Kg	5		6010B	Total/NA
Cadmium	0.32	J	0.50	0.25	mg/Kg	5		6010B	Total/NA
Chromium	23		0.99	0.50	mg/Kg	5		6010B	Total/NA
Cobalt	11		0.99	0.50	mg/Kg	5		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-1

Client Sample ID: DFSEP7-1 (Continued) — Lab Sample ID: 440-180371-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	28		2.0	0.99	mg/Kg	5		6010B	Total/NA
Lead	7.5		2.0	0.99	mg/Kg	5		6010B	Total/NA
Nickel	16		2.0	0.99	mg/Kg	5		6010B	Total/NA
Thallium	8.3	J	9.9	5.0	mg/Kg	5		6010B	Total/NA
Vanadium	74		0.99	0.50	mg/Kg	5		6010B	Total/NA
Zinc	68		5.0	2.5	mg/Kg	5		6010B	Total/NA
Barium	0.13	J	0.20	0.060	mg/L	1		6010B	SPLP West
Copper	0.060	J B	0.20	0.030	mg/L	1		6010B	SPLP West
Lead	0.076	J B	0.10	0.040	mg/L	1		6010B	SPLP West
Vanadium	0.13	J	0.20	0.030	mg/L	1		6010B	SPLP West
Zinc	0.080	J	0.40	0.060	mg/L	1		6010B	SPLP West
Mercury	0.028		0.020	0.012	mg/Kg	1		7471A	Total/NA
pH	7.8		0.1	0.1	SU	1		9045C	Soluble

Client Sample ID: DFSEP7-3 — Lab Sample ID: 440-180371-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	14		3.0	1.5	mg/Kg	5		6010B	Total/NA
Barium	160		1.5	0.75	mg/Kg	5		6010B	Total/NA
Beryllium	0.80		0.50	0.25	mg/Kg	5		6010B	Total/NA
Cadmium	0.35	J	0.50	0.25	mg/Kg	5		6010B	Total/NA
Chromium	21		1.0	0.50	mg/Kg	5		6010B	Total/NA
Cobalt	12		1.0	0.50	mg/Kg	5		6010B	Total/NA
Copper	29		2.0	1.0	mg/Kg	5		6010B	Total/NA
Lead	7.0		2.0	1.0	mg/Kg	5		6010B	Total/NA
Nickel	17		2.0	1.0	mg/Kg	5		6010B	Total/NA
Thallium	7.6	J	10	5.0	mg/Kg	5		6010B	Total/NA
Vanadium	68		1.0	0.50	mg/Kg	5		6010B	Total/NA
Zinc	68		5.0	2.5	mg/Kg	5		6010B	Total/NA
Antimony	0.079	J B	0.20	0.070	mg/L	1		6010B	SPLP West
Barium	0.066	J	0.20	0.060	mg/L	1		6010B	SPLP West
Copper	0.043	J B	0.20	0.030	mg/L	1		6010B	SPLP West
Vanadium	0.12	J	0.20	0.030	mg/L	1		6010B	SPLP West
Mercury	0.044		0.020	0.012	mg/Kg	1		7471A	Total/NA
pH	8.1		0.1	0.1	SU	1		9045C	Soluble

Client Sample ID: DFSEP8-1 — Lab Sample ID: 440-180371-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.1		3.0	1.5	mg/Kg	5		6010B	Total/NA
Barium	200		1.5	0.74	mg/Kg	5		6010B	Total/NA
Beryllium	0.62		0.50	0.25	mg/Kg	5		6010B	Total/NA
Cadmium	0.30	J	0.50	0.25	mg/Kg	5		6010B	Total/NA
Chromium	30		0.99	0.50	mg/Kg	5		6010B	Total/NA
Cobalt	13		0.99	0.50	mg/Kg	5		6010B	Total/NA
Copper	27		2.0	0.99	mg/Kg	5		6010B	Total/NA
Lead	6.7		2.0	0.99	mg/Kg	5		6010B	Total/NA
Nickel	21		2.0	0.99	mg/Kg	5		6010B	Total/NA
Thallium	9.0	J	9.9	5.0	mg/Kg	5		6010B	Total/NA
Vanadium	94		0.99	0.50	mg/Kg	5		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: DFSEP8-1 (Continued)

Lab Sample ID: 440-180371-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Zinc	68		5.0	2.5	mg/Kg	5		6010B	Total/NA
Barium	0.13	J	0.20	0.060	mg/L	1		6010B	SPLP West
Copper	0.042	J B	0.20	0.030	mg/L	1		6010B	SPLP West
Lead	0.045	J B	0.10	0.040	mg/L	1		6010B	SPLP West
Vanadium	0.12	J	0.20	0.030	mg/L	1		6010B	SPLP West
Mercury	0.018	J	0.020	0.012	mg/Kg	1		7471A	Total/NA
pH	9.0		0.1	0.1	SU	1		9045C	Soluble

Client Sample ID: DFSEP8-3

Lab Sample ID: 440-180371-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	15		3.0	1.5	mg/Kg	5		6010B	Total/NA
Barium	180		1.5	0.75	mg/Kg	5		6010B	Total/NA
Beryllium	0.42	J	0.50	0.25	mg/Kg	5		6010B	Total/NA
Chromium	17		1.0	0.50	mg/Kg	5		6010B	Total/NA
Cobalt	7.5		1.0	0.50	mg/Kg	5		6010B	Total/NA
Copper	20		2.0	1.0	mg/Kg	5		6010B	Total/NA
Lead	5.1		2.0	1.0	mg/Kg	5		6010B	Total/NA
Molybdenum	1.1	J	2.0	1.0	mg/Kg	5		6010B	Total/NA
Nickel	12		2.0	1.0	mg/Kg	5		6010B	Total/NA
Thallium	6.5	J	10	5.0	mg/Kg	5		6010B	Total/NA
Vanadium	66		1.0	0.50	mg/Kg	5		6010B	Total/NA
Zinc	45		5.0	2.5	mg/Kg	5		6010B	Total/NA
Antimony	0.082	J B	0.20	0.070	mg/L	1		6010B	SPLP West
Barium	0.18	J	0.20	0.060	mg/L	1		6010B	SPLP West
Copper	0.050	J B	0.20	0.030	mg/L	1		6010B	SPLP West
Lead	0.055	J B	0.10	0.040	mg/L	1		6010B	SPLP West
Selenium	0.15		0.10	0.080	mg/L	1		6010B	SPLP West
Vanadium	0.16	J	0.20	0.030	mg/L	1		6010B	SPLP West
Mercury	0.046		0.020	0.012	mg/Kg	1		7471A	Total/NA
pH	9.1		0.1	0.1	SU	1		9045C	Soluble

This Detection Summary does not include radiochemical test results.

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-1

Client Sample ID: DFSEP6-1

Lab Sample ID: 440-180371-1
Date Collected: 03/22/17 15:13
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	F1	10	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Arsenic	**10**		3.0	1.5	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Barium	**130**		1.5	0.75	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Beryllium	**0.74**		0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Cadmium	**0.36**	**J**	0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Chromium	**43**		1.0	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Cobalt	**18**		1.0	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Copper	**41**		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Lead	**14**		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Molybdenum	ND		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Nickel	**25**		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Thallium	**5.4**	**J**	10	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Vanadium	**79**		1.0	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Zinc	**78**		5.0	2.5	mg/Kg		03/24/17 08:47	03/24/17 18:01	5
Silver	**0.77**	**J**	1.5	0.75	mg/Kg		03/24/17 08:47	03/24/17 18:01	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:46	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:46	1
Barium	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:46	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:46	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:46	1
Chromium	ND	*	0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:46	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:46	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:46	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:46	1
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:46	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:46	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:46	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:46	1
Vanadium	**0.058**	**J**	0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:46	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:46	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:46	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:23	03/28/17 01:43	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.067**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.49	0.42	mg/Kg		03/27/17 14:32	03/28/17 17:13	1

Client Sample ID: DFSEP6-1

Lab Sample ID: 440-180371-1
Date Collected: 03/22/17 15:13
Matrix: Solid
Date Received: 03/23/17 09:45

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.2		0.1	0.1	SU			03/24/17 16:34	1

Client Sample ID: DFSEP6-3

Lab Sample ID: 440-180371-2
Date Collected: 03/22/17 15:14
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Arsenic	8.9		3.0	1.5	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Barium	140		1.5	0.74	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Beryllium	0.74		0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Cadmium	0.44	J	0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Chromium	36		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Cobalt	16		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Copper	37		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Lead	8.3		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Molybdenum	ND		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Nickel	24		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Thallium	7.2	J	9.9	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Vanadium	83		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Zinc	82		5.0	2.5	mg/Kg		03/24/17 08:47	03/24/17 18:25	5
Silver	ND		1.5	0.74	mg/Kg		03/24/17 08:47	03/24/17 18:25	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:40	1
Arsenic	ND		0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:40	1
Barium	0.069	J	0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:40	1
Beryllium	ND		0.080	0.010	mg/L		03/29/17 16:22	03/30/17 18:40	1
Cadmium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:40	1
Chromium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:40	1
Cobalt	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:40	1
Copper	0.053	J B	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:40	1
Lead	0.048	J B	0.10	0.040	mg/L		03/29/17 16:22	03/30/17 18:40	1
Molybdenum	ND		0.40	0.020	mg/L		03/29/17 16:22	03/30/17 18:40	1
Nickel	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:40	1
Selenium	0.083	J	0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:40	1
Thallium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:40	1
Vanadium	0.058	J	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:40	1
Zinc	ND		0.40	0.060	mg/L		03/29/17 16:22	03/30/17 18:40	1
Silver	ND		0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:40	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0013	J	0.0020	0.0010	mg/L		03/29/17 18:08	03/30/17 22:52	1

Client Sample ID: DFSEP6-3

Lab Sample ID: 440-180371-2
Date Collected: 03/22/17 15:14
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.043**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:32	03/28/17 17:14	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.2**		0.1	0.1	SU			03/24/17 16:34	1

Client Sample ID: DFSEP7-1

Lab Sample ID: 440-180371-4
Date Collected: 03/22/17 15:45
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Arsenic	**14**		3.0	1.5	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Barium	**160**		1.5	0.74	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Beryllium	**0.72**		0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Cadmium	**0.32**	**J**	0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Chromium	**23**		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Cobalt	**11**		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Copper	**28**		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Lead	**7.5**		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Molybdenum	ND		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Nickel	**16**		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Thallium	**8.3**	**J**	9.9	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Vanadium	**74**		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Zinc	**68**		5.0	2.5	mg/Kg		03/24/17 08:47	03/24/17 18:27	5
Silver	ND		1.5	0.74	mg/Kg		03/24/17 08:47	03/24/17 18:27	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:51	1
Arsenic	ND		0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:51	1
Barium	**0.13**	**J**	0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:51	1
Beryllium	ND		0.080	0.010	mg/L		03/29/17 16:22	03/30/17 18:51	1
Cadmium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:51	1
Chromium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:51	1
Cobalt	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:51	1
Copper	**0.060**	**J B**	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:51	1
Lead	**0.076**	**J B**	0.10	0.040	mg/L		03/29/17 16:22	03/30/17 18:51	1
Molybdenum	ND		0.40	0.020	mg/L		03/29/17 16:22	03/30/17 18:51	1
Nickel	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:51	1
Selenium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:51	1
Thallium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:51	1
Vanadium	**0.13**	**J**	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:51	1
Zinc	**0.080**	**J**	0.40	0.060	mg/L		03/29/17 16:22	03/30/17 18:51	1

Client Sample ID: DFSEP7-1

Lab Sample ID: 440-180371-4

Date Collected: 03/22/17 15:45

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP) - SPLP West (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:51	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/29/17 18:08	03/30/17 23:00	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.028**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:32	03/28/17 17:14	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.8**		0.1	0.1	SU			03/24/17 16:54	1

Client Sample ID: DFSEP7-3

Lab Sample ID: 440-180371-5

Date Collected: 03/22/17 15:46

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Arsenic	**14**		3.0	1.5	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Barium	**160**		1.5	0.75	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Beryllium	**0.80**		0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Cadmium	**0.35**	**J**	0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Chromium	**21**		1.0	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Cobalt	**12**		1.0	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Copper	**29**		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Lead	**7.0**		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Molybdenum	ND		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Nickel	**17**		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Thallium	**7.6**	**J**	10	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Vanadium	**68**		1.0	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Zinc	**68**		5.0	2.5	mg/Kg		03/24/17 08:47	03/24/17 18:28	5
Silver	ND		1.5	0.75	mg/Kg		03/24/17 08:47	03/24/17 18:28	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.079**	**J B**	0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:53	1
Arsenic	ND		0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:53	1
Barium	**0.066**	**J**	0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:53	1
Beryllium	ND		0.080	0.010	mg/L		03/29/17 16:22	03/30/17 18:53	1
Cadmium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:53	1
Chromium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:53	1
Cobalt	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:53	1
Copper	**0.043**	**J B**	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:53	1

Client Sample ID: DFSEP7-3

Date Collected: 03/22/17 15:46
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180371-5
Matrix: Solid

Method: 6010B - Metals (ICP) - SPLP West (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.10	0.040	mg/L		03/29/17 16:22	03/30/17 18:53	1
Molybdenum	ND		0.40	0.020	mg/L		03/29/17 16:22	03/30/17 18:53	1
Nickel	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:53	1
Selenium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:53	1
Thallium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:53	1
Vanadium	**0.12**	**J**	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:53	1
Zinc	ND		0.40	0.060	mg/L		03/29/17 16:22	03/30/17 18:53	1
Silver	ND		0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:53	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/29/17 18:08	03/30/17 23:03	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.044**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:32	03/28/17 17:14	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.1**		0.1	0.1	SU			03/24/17 16:54	1

Client Sample ID: DFSEP8-1

Date Collected: 03/22/17 16:05
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180371-7
Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Arsenic	**7.1**		3.0	1.5	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Barium	**200**		1.5	0.74	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Beryllium	**0.62**		0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Cadmium	**0.30**	**J**	0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Chromium	**30**		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Cobalt	**13**		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Copper	**27**		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Lead	**6.7**		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Molybdenum	ND		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Nickel	**21**		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Thallium	**9.0**	**J**	9.9	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Vanadium	**94**		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Zinc	**68**		5.0	2.5	mg/Kg		03/24/17 08:47	03/24/17 18:30	5
Silver	ND		1.5	0.74	mg/Kg		03/24/17 08:47	03/24/17 18:30	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:55	1

Client Sample ID: DFSEP8-1

Lab Sample ID: 440-180371-7

Date Collected: 03/22/17 16:05

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP) - SPLP West (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:55	1
Barium	**0.13**	**J**	0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:55	1
Beryllium	ND		0.080	0.010	mg/L		03/29/17 16:22	03/30/17 18:55	1
Cadmium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:55	1
Chromium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:55	1
Cobalt	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:55	1
Copper	**0.042**	**J B**	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:55	1
Lead	**0.045**	**J B**	0.10	0.040	mg/L		03/29/17 16:22	03/30/17 18:55	1
Molybdenum	ND		0.40	0.020	mg/L		03/29/17 16:22	03/30/17 18:55	1
Nickel	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:55	1
Selenium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:55	1
Thallium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:55	1
Vanadium	**0.12**	**J**	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:55	1
Zinc	ND		0.40	0.060	mg/L		03/29/17 16:22	03/30/17 18:55	1
Silver	ND		0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:55	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/29/17 18:08	03/30/17 23:05	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.018**	**J**	0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.51	0.43	mg/Kg		03/27/17 14:32	03/28/17 17:14	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**9.0**		0.1	0.1	SU			03/24/17 16:54	1

Client Sample ID: DFSEP8-3

Lab Sample ID: 440-180371-8

Date Collected: 03/22/17 16:06

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Arsenic	**15**		3.0	1.5	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Barium	**180**		1.5	0.75	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Beryllium	**0.42**	**J**	0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Cadmium	ND		0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Chromium	**17**		1.0	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Cobalt	**7.5**		1.0	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Copper	**20**		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Lead	**5.1**		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Molybdenum	**1.1**	**J**	2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Nickel	**12**		2.0	1.0	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Thallium	**6.5**	**J**	10	5.0	mg/Kg		03/24/17 08:47	03/24/17 18:32	5

Client Sample Results

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-1

Client Sample ID: DFSEP8-3

Date Collected: 03/22/17 16:06
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180371-8

Matrix: Solid

Method: 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	**66**		1.0	0.50	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Zinc	**45**		5.0	2.5	mg/Kg		03/24/17 08:47	03/24/17 18:32	5
Silver	ND		1.5	0.75	mg/Kg		03/24/17 08:47	03/24/17 18:32	5

Method: 6010B - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.082**	**J B**	0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:56	1
Arsenic	ND		0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:56	1
Barium	**0.18**	**J**	0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:56	1
Beryllium	ND		0.080	0.010	mg/L		03/29/17 16:22	03/30/17 18:56	1
Cadmium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:56	1
Chromium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:56	1
Cobalt	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:56	1
Copper	**0.050**	**J B**	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:56	1
Lead	**0.055**	**J B**	0.10	0.040	mg/L		03/29/17 16:22	03/30/17 18:56	1
Molybdenum	ND		0.40	0.020	mg/L		03/29/17 16:22	03/30/17 18:56	1
Nickel	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:56	1
Selenium	**0.15**		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:56	1
Thallium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:56	1
Vanadium	**0.16**	**J**	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:56	1
Zinc	ND		0.40	0.060	mg/L		03/29/17 16:22	03/30/17 18:56	1
Silver	ND		0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:56	1

Method: 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/29/17 18:08	03/30/17 23:08	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.046**		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 19:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:32	03/28/17 17:14	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**9.1**		0.1	0.1	SU			03/24/17 16:54	1

Method Summary

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL IRV
7470A	Mercury (CVAA)	SW846	TAL IRV
7471A	Mercury (CVAA)	SW846	TAL IRV
9014	Cyanide	SW846	TAL IRV
9045C	pH	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-1

Client Sample ID: DFSEP6-1

Lab Sample ID: 440-180371-1
Date Collected: 03/22/17 15:13
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.00 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396411	03/27/17 16:44	ZEM	TAL IRV
SPLP West	Analysis	6010B		1			396876	03/29/17 14:46	EN	TAL IRV
Total/NA	Prep	3050B			2.01 g	50 mL	395913	03/24/17 08:47	DT	TAL IRV
Total/NA	Analysis	6010B		5			396060	03/24/17 18:01	K1E	TAL IRV
SPLP West	Leach	1312			100.00 g	2000 mL	396227	03/26/17 22:53	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396418	03/27/17 17:23	DB	TAL IRV
SPLP West	Analysis	7470A		1			396461	03/28/17 01:43	DB	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:28	DB	TAL IRV
Total/NA	Prep	9010B			2.03 g	50 mL	396370	03/27/17 14:32	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:13	SN	TAL IRV
Soluble	Leach	DI Leach			20.02 g	20.00 mL	396012	03/24/17 15:22	RB	TAL IRV
Soluble	Analysis	9045C		1			396034	03/24/17 16:34	RB	TAL IRV

Client Sample ID: DFSEP6-3

Lab Sample ID: 440-180371-2
Date Collected: 03/22/17 15:14
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			99.97 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396909	03/29/17 16:22	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397182	03/30/17 18:40	VS	TAL IRV
Total/NA	Prep	3050B			2.02 g	50 mL	395913	03/24/17 08:47	DT	TAL IRV
Total/NA	Analysis	6010B		5			396060	03/24/17 18:25	K1E	TAL IRV
SPLP West	Leach	1312			99.97 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396930	03/29/17 18:08	DB	TAL IRV
SPLP West	Analysis	7470A		1			397387	03/30/17 22:52	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:31	DB	TAL IRV
Total/NA	Prep	9010B			2.01 g	50 mL	396370	03/27/17 14:32	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:14	SN	TAL IRV
Soluble	Leach	DI Leach			19.99 g	20.00 mL	396012	03/24/17 15:22	RB	TAL IRV
Soluble	Analysis	9045C		1			396034	03/24/17 16:34	RB	TAL IRV

Client Sample ID: DFSEP7-1

Lab Sample ID: 440-180371-4
Date Collected: 03/22/17 15:45
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.04 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396909	03/29/17 16:22	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397182	03/30/17 18:51	VS	TAL IRV
Total/NA	Prep	3050B			2.02 g	50 mL	395913	03/24/17 08:47	DT	TAL IRV

Client Sample ID: DFSEP7-1

Lab Sample ID: 440-180371-4

Date Collected: 03/22/17 15:45
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010B		5			396060	03/24/17 18:27	K1E	TAL IRV
SPLP West	Leach	1312			100.04 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396930	03/29/17 18:08	DB	TAL IRV
SPLP West	Analysis	7470A		1			397387	03/30/17 23:00	EN	TAL IRV
Total/NA	Prep	7471A			0.50 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:33	DB	TAL IRV
Total/NA	Prep	9010B			2.02 g	50 mL	396370	03/27/17 14:32	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:14	SN	TAL IRV
Soluble	Leach	DI Leach			20.02 g	20 mL	396021	03/24/17 15:41	RB	TAL IRV
Soluble	Analysis	9045C		1			396045	03/24/17 16:54	RB	TAL IRV

Client Sample ID: DFSEP7-3

Lab Sample ID: 440-180371-5

Date Collected: 03/22/17 15:46
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			99.99 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396909	03/29/17 16:22	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397182	03/30/17 18:53	VS	TAL IRV
Total/NA	Prep	3050B			2.01 g	50 mL	395913	03/24/17 08:47	DT	TAL IRV
Total/NA	Analysis	6010B		5			396060	03/24/17 18:28	K1E	TAL IRV
SPLP West	Leach	1312			99.99 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396930	03/29/17 18:08	DB	TAL IRV
SPLP West	Analysis	7470A		1			397387	03/30/17 23:03	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:36	DB	TAL IRV
Total/NA	Prep	9010B			2.00 g	50 mL	396370	03/27/17 14:32	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:14	SN	TAL IRV
Soluble	Leach	DI Leach			20.01 g	20 mL	396021	03/24/17 15:41	RB	TAL IRV
Soluble	Analysis	9045C		1			396045	03/24/17 16:54	RB	TAL IRV

Client Sample ID: DFSEP8-1

Lab Sample ID: 440-180371-7

Date Collected: 03/22/17 16:05
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			99.97 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396909	03/29/17 16:22	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397182	03/30/17 18:55	VS	TAL IRV
Total/NA	Prep	3050B			2.02 g	50 mL	395913	03/24/17 08:47	DT	TAL IRV
Total/NA	Analysis	6010B		5			396060	03/24/17 18:30	K1E	TAL IRV
SPLP West	Leach	1312			99.97 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396930	03/29/17 18:08	DB	TAL IRV
SPLP West	Analysis	7470A		1			397387	03/30/17 23:05	EN	TAL IRV

Client Sample ID: DFSEP8-1
Date Collected: 03/22/17 16:05
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180371-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471A			0.51 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:39	DB	TAL IRV
Total/NA	Prep	9010B			1.98 g	50 mL	396370	03/27/17 14:32	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:14	SN	TAL IRV
Soluble	Leach	DI Leach			20.02 g	20 mL	396021	03/24/17 15:41	RB	TAL IRV
Soluble	Analysis	9045C		1			396045	03/24/17 16:54	RB	TAL IRV

Client Sample ID: DFSEP8-3
Date Collected: 03/22/17 16:06
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180371-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			100.02 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	3010A			5 mL	50 mL	396909	03/29/17 16:22	CDH	TAL IRV
SPLP West	Analysis	6010B		1			397182	03/30/17 18:56	VS	TAL IRV
Total/NA	Prep	3050B			2.00 g	50 mL	395913	03/24/17 08:47	DT	TAL IRV
Total/NA	Analysis	6010B		5			396060	03/24/17 18:32	K1E	TAL IRV
SPLP West	Leach	1312			100.02 g	2000 mL	396424	03/27/17 18:55	ZEM	TAL IRV
SPLP West	Prep	7470A			2 mL	20 mL	396930	03/29/17 18:08	DB	TAL IRV
SPLP West	Analysis	7470A		1			397387	03/30/17 23:08	EN	TAL IRV
Total/NA	Prep	7471A			0.50 g	50 mL	396446	03/28/17 01:34	DB	TAL IRV
Total/NA	Analysis	7471A		1			396922	03/28/17 19:41	DB	TAL IRV
Total/NA	Prep	9010B			2.00 g	50 mL	396370	03/27/17 14:32	SN	TAL IRV
Total/NA	Analysis	9014		1			396652	03/28/17 17:14	SN	TAL IRV
Soluble	Leach	DI Leach			19.98 g	20 mL	396021	03/24/17 15:41	RB	TAL IRV
Soluble	Analysis	9045C		1			396045	03/24/17 16:54	RB	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-395913/1-A ^5
Matrix: Solid
Analysis Batch: 396060

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 395913

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	5.0	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Arsenic	ND		3.0	1.5	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Barium	ND		1.5	0.74	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Beryllium	ND		0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Cadmium	ND		0.50	0.25	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Chromium	ND		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Cobalt	ND		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Copper	ND		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Lead	ND		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Molybdenum	ND		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Nickel	ND		2.0	0.99	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Selenium	ND		3.0	1.7	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Thallium	ND		9.9	5.0	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Vanadium	ND		0.99	0.50	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Zinc	ND		5.0	2.5	mg/Kg		03/24/17 08:47	03/24/17 17:56	5
Silver	ND		1.5	0.74	mg/Kg		03/24/17 08:47	03/24/17 17:56	5

Lab Sample ID: LCS 440-395913/2-A ^5
Matrix: Solid
Analysis Batch: 396060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 395913

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	49.5	44.8		mg/Kg		90	80 - 120
Arsenic	49.5	44.8		mg/Kg		90	80 - 120
Barium	49.5	45.6		mg/Kg		92	80 - 120
Beryllium	49.5	44.1		mg/Kg		89	80 - 120
Cadmium	49.5	44.9		mg/Kg		91	80 - 120
Chromium	49.5	48.3		mg/Kg		97	80 - 120
Cobalt	49.5	47.4		mg/Kg		96	80 - 120
Copper	49.5	45.3		mg/Kg		92	80 - 120
Lead	49.5	45.7		mg/Kg		92	80 - 120
Molybdenum	49.5	47.2		mg/Kg		95	80 - 120
Nickel	49.5	48.3		mg/Kg		98	80 - 120
Selenium	49.5	40.9		mg/Kg		83	80 - 120
Thallium	49.5	46.1		mg/Kg		93	80 - 120
Vanadium	49.5	45.8		mg/Kg		92	80 - 120
Zinc	49.5	44.4		mg/Kg		90	80 - 120
Silver	24.8	22.7		mg/Kg		92	80 - 120

Lab Sample ID: 440-180371-1 MS
Matrix: Solid
Analysis Batch: 396060

Client Sample ID: DFSEP6-1
Prep Type: Total/NA
Prep Batch: 395913

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	F1	50.0	18.0	F1	mg/Kg		36	75 - 125
Arsenic	10		50.0	55.2		mg/Kg		90	75 - 125
Barium	130		50.0	179		mg/Kg		108	75 - 125
Beryllium	0.74		50.0	45.8		mg/Kg		90	75 - 125

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-180371-1 MS
Matrix: Solid
Analysis Batch: 396060

Client Sample ID: DFSEP6-1
Prep Type: Total/NA
Prep Batch: 395913

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.36	J	50.0	45.7		mg/Kg		91	75 - 125
Chromium	43		50.0	91.2		mg/Kg		97	75 - 125
Cobalt	18		50.0	62.3		mg/Kg		89	75 - 125
Copper	41		50.0	91.4		mg/Kg		101	75 - 125
Lead	14		50.0	58.0		mg/Kg		88	75 - 125
Molybdenum	ND		50.0	44.8		mg/Kg		90	75 - 125
Nickel	25		50.0	70.1		mg/Kg		91	75 - 125
Selenium	ND		50.0	40.7		mg/Kg		81	75 - 125
Thallium	5.4	J	50.0	51.3		mg/Kg		92	75 - 125
Vanadium	79		50.0	134		mg/Kg		109	75 - 125
Zinc	78		50.0	122		mg/Kg		88	75 - 125
Silver	0.77	J	25.0	24.4		mg/Kg		95	75 - 125

Lab Sample ID: 440-180371-1 MSD
Matrix: Solid
Analysis Batch: 396060

Client Sample ID: DFSEP6-1
Prep Type: Total/NA
Prep Batch: 395913

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND	F1	49.3	16.1	F1	mg/Kg		33	75 - 125	11	20
Arsenic	10		49.3	53.1		mg/Kg		88	75 - 125	4	20
Barium	130		49.3	174		mg/Kg		99	75 - 125	3	20
Beryllium	0.74		49.3	44.9		mg/Kg		90	75 - 125	2	20
Cadmium	0.36	J	49.3	44.2		mg/Kg		89	75 - 125	3	20
Chromium	43		49.3	87.1		mg/Kg		90	75 - 125	5	20
Cobalt	18		49.3	60.2		mg/Kg		86	75 - 125	3	20
Copper	41		49.3	88.3		mg/Kg		96	75 - 125	3	20
Lead	14		49.3	55.8		mg/Kg		85	75 - 125	4	20
Molybdenum	ND		49.3	43.3		mg/Kg		88	75 - 125	3	20
Nickel	25		49.3	68.0		mg/Kg		88	75 - 125	3	20
Selenium	ND		49.3	39.0		mg/Kg		79	75 - 125	4	20
Thallium	5.4	J	49.3	49.3		mg/Kg		89	75 - 125	4	20
Vanadium	79		49.3	129		mg/Kg		101	75 - 125	4	20
Zinc	78		49.3	117		mg/Kg		79	75 - 125	4	20
Silver	0.77	J	24.6	24.0		mg/Kg		94	75 - 125	2	20

Lab Sample ID: MB 440-396227/1-B
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396411

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:09	1
Arsenic	ND		0.20	0.070	mg/L		03/27/17 16:44	03/29/17 14:09	1
Barium	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:09	1
Beryllium	ND		0.080	0.010	mg/L		03/27/17 16:44	03/29/17 14:09	1
Cadmium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Chromium	ND		0.10	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Cobalt	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Copper	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:09	1
Lead	ND		0.10	0.040	mg/L		03/27/17 16:44	03/29/17 14:09	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 440-396227/1-B
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396411

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.40	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Nickel	ND		0.20	0.020	mg/L		03/27/17 16:44	03/29/17 14:09	1
Selenium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:09	1
Thallium	ND		0.10	0.080	mg/L		03/27/17 16:44	03/29/17 14:09	1
Vanadium	ND		0.20	0.030	mg/L		03/27/17 16:44	03/29/17 14:09	1
Zinc	ND		0.40	0.060	mg/L		03/27/17 16:44	03/29/17 14:09	1
Silver	ND		0.20	0.060	mg/L		03/27/17 16:44	03/29/17 14:09	1

Lab Sample ID: LCS 440-396227/2-B
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: Lab Control Sample
Prep Type: SPLP West
Prep Batch: 396411

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	2.00	1.91		mg/L		96	80 - 120
Arsenic	2.00	1.87		mg/L		93	80 - 120
Barium	2.00	1.89		mg/L		95	80 - 120
Beryllium	2.00	1.86		mg/L		93	80 - 120
Cadmium	2.00	1.85		mg/L		93	80 - 120
Chromium	2.00	2.58	*	mg/L		129	80 - 120
Cobalt	2.00	2.02		mg/L		101	80 - 120
Copper	2.00	1.92		mg/L		96	80 - 120
Lead	2.00	1.90		mg/L		95	80 - 120
Molybdenum	2.00	1.89		mg/L		94	80 - 120
Nickel	2.00	2.34		mg/L		117	80 - 120
Selenium	2.00	1.75		mg/L		87	80 - 120
Thallium	2.00	1.92		mg/L		96	80 - 120
Vanadium	2.00	1.89		mg/L		95	80 - 120
Zinc	2.00	1.83		mg/L		92	80 - 120
Silver	1.00	0.982		mg/L		98	80 - 120

Lab Sample ID: 440-180360-A-1-I MS
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: Matrix Spike
Prep Type: SPLP West
Prep Batch: 396411

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		2.00	1.97		mg/L		98	75 - 125
Arsenic	ND		2.00	1.95		mg/L		97	75 - 125
Barium	ND		2.00	1.98		mg/L		99	75 - 125
Beryllium	ND		2.00	1.90		mg/L		95	75 - 125
Cadmium	ND		2.00	1.91		mg/L		96	75 - 125
Chromium	ND	*	2.00	2.06		mg/L		103	75 - 125
Cobalt	ND		2.00	2.05		mg/L		103	75 - 125
Copper	ND		2.00	2.01		mg/L		100	75 - 125
Lead	ND		2.00	1.97		mg/L		99	75 - 125
Molybdenum	ND		2.00	1.93		mg/L		96	75 - 125
Nickel	ND		2.00	2.05		mg/L		103	75 - 125
Selenium	ND		2.00	1.82		mg/L		91	75 - 125
Thallium	ND		2.00	1.95		mg/L		97	75 - 125
Vanadium	0.13	J	2.00	2.07		mg/L		97	75 - 125

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-180360-A-1-I MS
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: Matrix Spike
Prep Type: SPLP West
Prep Batch: 396411

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	ND		2.00	1.89		mg/L		94	75 - 125
Silver	ND		1.00	1.02		mg/L		102	75 - 125

Lab Sample ID: 440-180360-A-1-J MSD
Matrix: Solid
Analysis Batch: 396876

Client Sample ID: Matrix Spike Duplicate
Prep Type: SPLP West
Prep Batch: 396411

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		2.00	2.00		mg/L		100	75 - 125	2	20
Arsenic	ND		2.00	1.98		mg/L		99	75 - 125	2	20
Barium	ND		2.00	1.97		mg/L		98	75 - 125	1	20
Beryllium	ND		2.00	1.89		mg/L		94	75 - 125	0	20
Cadmium	ND		2.00	1.89		mg/L		95	75 - 125	1	20
Chromium	ND	*	2.00	2.15		mg/L		108	75 - 125	4	20
Cobalt	ND		2.00	2.05		mg/L		102	75 - 125	0	20
Copper	ND		2.00	1.99		mg/L		99	75 - 125	1	20
Lead	ND		2.00	1.96		mg/L		98	75 - 125	1	20
Molybdenum	ND		2.00	1.92		mg/L		96	75 - 125	0	20
Nickel	ND		2.00	2.10		mg/L		105	75 - 125	2	20
Selenium	ND		2.00	1.80		mg/L		90	75 - 125	1	20
Thallium	ND		2.00	1.94		mg/L		97	75 - 125	0	20
Vanadium	0.13	J	2.00	2.05		mg/L		96	75 - 125	1	20
Zinc	ND		2.00	1.87		mg/L		93	75 - 125	1	20
Silver	ND		1.00	1.01		mg/L		101	75 - 125	1	20

Lab Sample ID: MB 440-396424/1-B
Matrix: Solid
Analysis Batch: 397182

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0758	J	0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:30	1
Arsenic	ND		0.20	0.070	mg/L		03/29/17 16:22	03/30/17 18:30	1
Barium	ND		0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:30	1
Beryllium	ND		0.080	0.010	mg/L		03/29/17 16:22	03/30/17 18:30	1
Cadmium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:30	1
Chromium	ND		0.10	0.020	mg/L		03/29/17 16:22	03/30/17 18:30	1
Cobalt	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:30	1
Copper	0.0318	J	0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:30	1
Lead	0.0500	J	0.10	0.040	mg/L		03/29/17 16:22	03/30/17 18:30	1
Molybdenum	ND		0.40	0.020	mg/L		03/29/17 16:22	03/30/17 18:30	1
Nickel	ND		0.20	0.020	mg/L		03/29/17 16:22	03/30/17 18:30	1
Selenium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:30	1
Thallium	ND		0.10	0.080	mg/L		03/29/17 16:22	03/30/17 18:30	1
Vanadium	ND		0.20	0.030	mg/L		03/29/17 16:22	03/30/17 18:30	1
Zinc	ND		0.40	0.060	mg/L		03/29/17 16:22	03/30/17 18:30	1
Silver	ND		0.20	0.060	mg/L		03/29/17 16:22	03/30/17 18:30	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 440-396424/2-B
Matrix: Solid
Analysis Batch: 397182

Client Sample ID: Lab Control Sample
Prep Type: SPLP West
Prep Batch: 396909

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	2.00	2.06		mg/L		103	80 - 120
Arsenic	2.00	1.88		mg/L		94	80 - 120
Barium	2.00	2.02		mg/L		101	80 - 120
Beryllium	2.00	1.93		mg/L		96	80 - 120
Cadmium	2.00	1.89		mg/L		94	80 - 120
Chromium	2.00	2.05		mg/L		102	80 - 120
Cobalt	2.00	2.00		mg/L		100	80 - 120
Copper	2.00	2.08		mg/L		104	80 - 120
Lead	2.00	1.99		mg/L		100	80 - 120
Molybdenum	2.00	1.97		mg/L		99	80 - 120
Nickel	2.00	2.02		mg/L		101	80 - 120
Selenium	2.00	1.72		mg/L		86	80 - 120
Thallium	2.00	1.87		mg/L		94	80 - 120
Vanadium	2.00	2.01		mg/L		101	80 - 120
Zinc	2.00	1.86		mg/L		93	80 - 120
Silver	1.00	0.941		mg/L		94	80 - 120

Lab Sample ID: 440-180371-2 MS
Matrix: Solid
Analysis Batch: 397182

Client Sample ID: DFSEP6-3
Prep Type: SPLP West
Prep Batch: 396909

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		2.00	2.12		mg/L		106	75 - 125
Arsenic	ND		2.00	1.78		mg/L		89	75 - 125
Barium	0.069	J	2.00	2.05		mg/L		99	75 - 125
Beryllium	ND		2.00	1.92		mg/L		96	75 - 125
Cadmium	ND		2.00	1.86		mg/L		93	75 - 125
Chromium	ND		2.00	2.01		mg/L		101	75 - 125
Cobalt	ND		2.00	1.96		mg/L		98	75 - 125
Copper	0.053	J B	2.00	2.10		mg/L		103	75 - 125
Lead	0.048	J B	2.00	1.97		mg/L		96	75 - 125
Molybdenum	ND		2.00	1.99		mg/L		99	75 - 125
Nickel	ND		2.00	2.00		mg/L		100	75 - 125
Selenium	0.083	J	2.00	1.77		mg/L		84	75 - 125
Thallium	ND		2.00	1.85		mg/L		92	75 - 125
Vanadium	0.058	J	2.00	2.05		mg/L		99	75 - 125
Zinc	ND		2.00	1.87		mg/L		94	75 - 125
Silver	ND		1.00	0.931		mg/L		93	75 - 125

Lab Sample ID: 440-180371-2 MSD
Matrix: Solid
Analysis Batch: 397182

Client Sample ID: DFSEP6-3
Prep Type: SPLP West
Prep Batch: 396909

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		2.00	2.10		mg/L		105	75 - 125	1	20
Arsenic	ND		2.00	1.87		mg/L		94	75 - 125	5	20
Barium	0.069	J	2.00	2.12		mg/L		102	75 - 125	3	20
Beryllium	ND		2.00	1.99		mg/L		99	75 - 125	4	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-180371-2 MSD
Matrix: Solid
Analysis Batch: 397182
Client Sample ID: DFSEP6-3
Prep Type: SPLP West
Prep Batch: 396909

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND		2.00	1.90		mg/L		95	75 - 125	3	20
Chromium	ND		2.00	2.09		mg/L		105	75 - 125	4	20
Cobalt	ND		2.00	2.03		mg/L		102	75 - 125	4	20
Copper	0.053	J B	2.00	2.16		mg/L		105	75 - 125	3	20
Lead	0.048	J B	2.00	2.02		mg/L		99	75 - 125	3	20
Molybdenum	ND		2.00	1.98		mg/L		99	75 - 125	1	20
Nickel	ND		2.00	2.07		mg/L		104	75 - 125	4	20
Selenium	0.083	J	2.00	1.77		mg/L		84	75 - 125	0	20
Thallium	ND		2.00	1.93		mg/L		96	75 - 125	4	20
Vanadium	0.058	J	2.00	2.11		mg/L		103	75 - 125	3	20
Zinc	ND		2.00	1.95		mg/L		97	75 - 125	4	20
Silver	ND		1.00	0.959		mg/L		96	75 - 125	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 440-396227/1-C
Matrix: Solid
Analysis Batch: 396461
Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396418

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/27/17 17:21	03/28/17 01:05	1

Lab Sample ID: LCS 440-396227/2-C
Matrix: Solid
Analysis Batch: 396461
Client Sample ID: Lab Control Sample
Prep Type: SPLP West
Prep Batch: 396418

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0800	0.0872		mg/L		109	80 - 120

Lab Sample ID: 440-180360-A-1-L MS
Matrix: Solid
Analysis Batch: 396461
Client Sample ID: Matrix Spike
Prep Type: SPLP West
Prep Batch: 396418

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0015	J	0.0800	0.0905		mg/L		111	70 - 130

Lab Sample ID: 440-180360-A-1-M MSD
Matrix: Solid
Analysis Batch: 396461
Client Sample ID: Matrix Spike Duplicate
Prep Type: SPLP West
Prep Batch: 396418

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.0015	J	0.0800	0.0905		mg/L		111	70 - 130	0	20

Lab Sample ID: MB 440-396424/1-C
Matrix: Solid
Analysis Batch: 397387
Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 396930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		03/29/17 18:08	03/30/17 22:47	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 440-396424/2-C
Matrix: Solid
Analysis Batch: 397387

Client Sample ID: Lab Control Sample
Prep Type: SPLP West
Prep Batch: 396930

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.0800	0.0770		mg/L		96	80 - 120		

Lab Sample ID: 440-180371-2 MS
Matrix: Solid
Analysis Batch: 397387

Client Sample ID: DFSEP6-3
Prep Type: SPLP West
Prep Batch: 396930

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.0013	J	0.0800	0.0766		mg/L		94	70 - 130		

Lab Sample ID: 440-180371-2 MSD
Matrix: Solid
Analysis Batch: 397387

Client Sample ID: DFSEP6-3
Prep Type: SPLP West
Prep Batch: 396930

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.0013	J	0.0800	0.0778		mg/L		96	70 - 130	2	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 440-396446/1-A
Matrix: Solid
Analysis Batch: 396922

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 396446

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.012	mg/Kg		03/28/17 01:34	03/28/17 18:28	1

Lab Sample ID: LCS 440-396446/2-A
Matrix: Solid
Analysis Batch: 396922

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 396446

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.800	0.885		mg/Kg		111	80 - 120		

Lab Sample ID: 440-180360-A-1-O MS
Matrix: Solid
Analysis Batch: 396922

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 396446

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.038		0.800	0.828		mg/Kg		99	70 - 130		

Lab Sample ID: 440-180360-A-1-P MSD
Matrix: Solid
Analysis Batch: 396922

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 396446

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.038		0.800	0.849		mg/Kg		101	70 - 130	3	20

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-1

Method: 9014 - Cyanide

Lab Sample ID: MB 440-396370/1-A
Matrix: Solid
Analysis Batch: 396652

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 396370

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.43	mg/Kg		03/27/17 14:32	03/28/17 17:13	1

Lab Sample ID: LCS 440-396370/2-A
Matrix: Solid
Analysis Batch: 396652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 396370

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	5.00	4.78		mg/Kg		96	90 - 110

Lab Sample ID: 440-180371-1 MS
Matrix: Solid
Analysis Batch: 396652

Client Sample ID: DFSEP6-1
Prep Type: Total/NA
Prep Batch: 396370

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		4.98	5.32		mg/Kg		107	70 - 115

Lab Sample ID: 440-180371-1 MSD
Matrix: Solid
Analysis Batch: 396652

Client Sample ID: DFSEP6-1
Prep Type: Total/NA
Prep Batch: 396370

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		5.03	5.25		mg/Kg		104	70 - 115	1	15

Method: 9045C - pH

Lab Sample ID: 440-180360-A-11-C DU
Matrix: Solid
Analysis Batch: 396034

Client Sample ID: Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.4		8.5		SU		0.6	2

Lab Sample ID: 440-180371-4 DU
Matrix: Solid
Analysis Batch: 396045

Client Sample ID: DFSEP7-1
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.8		7.8		SU		0.3	2

Metals

Prep Batch: 395913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	Total/NA	Solid	3050B	
440-180371-2	DFSEP6-3	Total/NA	Solid	3050B	
440-180371-4	DFSEP7-1	Total/NA	Solid	3050B	
440-180371-5	DFSEP7-3	Total/NA	Solid	3050B	
440-180371-7	DFSEP8-1	Total/NA	Solid	3050B	
440-180371-8	DFSEP8-3	Total/NA	Solid	3050B	
MB 440-395913/1-A ^5	Method Blank	Total/NA	Solid	3050B	
LCS 440-395913/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
440-180371-1 MS	DFSEP6-1	Total/NA	Solid	3050B	
440-180371-1 MSD	DFSEP6-1	Total/NA	Solid	3050B	

Analysis Batch: 396060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	Total/NA	Solid	6010B	395913
440-180371-2	DFSEP6-3	Total/NA	Solid	6010B	395913
440-180371-4	DFSEP7-1	Total/NA	Solid	6010B	395913
440-180371-5	DFSEP7-3	Total/NA	Solid	6010B	395913
440-180371-7	DFSEP8-1	Total/NA	Solid	6010B	395913
440-180371-8	DFSEP8-3	Total/NA	Solid	6010B	395913
MB 440-395913/1-A ^5	Method Blank	Total/NA	Solid	6010B	395913
LCS 440-395913/2-A ^5	Lab Control Sample	Total/NA	Solid	6010B	395913
440-180371-1 MS	DFSEP6-1	Total/NA	Solid	6010B	395913
440-180371-1 MSD	DFSEP6-1	Total/NA	Solid	6010B	395913

Leach Batch: 396227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	SPLP West	Solid	1312	
MB 440-396227/1-B	Method Blank	SPLP West	Solid	1312	
MB 440-396227/1-C	Method Blank	SPLP West	Solid	1312	
LCS 440-396227/2-B	Lab Control Sample	SPLP West	Solid	1312	
LCS 440-396227/2-C	Lab Control Sample	SPLP West	Solid	1312	
440-180360-A-1-I MS	Matrix Spike	SPLP West	Solid	1312	
440-180360-A-1-J MSD	Matrix Spike Duplicate	SPLP West	Solid	1312	
440-180360-A-1-L MS	Matrix Spike	SPLP West	Solid	1312	
440-180360-A-1-M MSD	Matrix Spike Duplicate	SPLP West	Solid	1312	

Prep Batch: 396411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	SPLP West	Solid	3010A	396227
MB 440-396227/1-B	Method Blank	SPLP West	Solid	3010A	396227
LCS 440-396227/2-B	Lab Control Sample	SPLP West	Solid	3010A	396227
440-180360-A-1-I MS	Matrix Spike	SPLP West	Solid	3010A	396227
440-180360-A-1-J MSD	Matrix Spike Duplicate	SPLP West	Solid	3010A	396227

Prep Batch: 396418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	SPLP West	Solid	7470A	396227
MB 440-396227/1-C	Method Blank	SPLP West	Solid	7470A	396227
LCS 440-396227/2-C	Lab Control Sample	SPLP West	Solid	7470A	396227
440-180360-A-1-L MS	Matrix Spike	SPLP West	Solid	7470A	396227
440-180360-A-1-M MSD	Matrix Spike Duplicate	SPLP West	Solid	7470A	396227

Leach Batch: 396424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-2	DFSEP6-3	SPLP West	Solid	1312	
440-180371-4	DFSEP7-1	SPLP West	Solid	1312	
440-180371-5	DFSEP7-3	SPLP West	Solid	1312	
440-180371-7	DFSEP8-1	SPLP West	Solid	1312	
440-180371-8	DFSEP8-3	SPLP West	Solid	1312	
MB 440-396424/1-B	Method Blank	SPLP West	Solid	1312	
MB 440-396424/1-C	Method Blank	SPLP West	Solid	1312	
LCS 440-396424/2-B	Lab Control Sample	SPLP West	Solid	1312	
LCS 440-396424/2-C	Lab Control Sample	SPLP West	Solid	1312	
440-180371-2 MS	DFSEP6-3	SPLP West	Solid	1312	
440-180371-2 MSD	DFSEP6-3	SPLP West	Solid	1312	

Prep Batch: 396446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	Total/NA	Solid	7471A	
440-180371-2	DFSEP6-3	Total/NA	Solid	7471A	
440-180371-4	DFSEP7-1	Total/NA	Solid	7471A	
440-180371-5	DFSEP7-3	Total/NA	Solid	7471A	
440-180371-7	DFSEP8-1	Total/NA	Solid	7471A	
440-180371-8	DFSEP8-3	Total/NA	Solid	7471A	
MB 440-396446/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 440-396446/2-A	Lab Control Sample	Total/NA	Solid	7471A	
440-180360-A-1-O MS	Matrix Spike	Total/NA	Solid	7471A	
440-180360-A-1-P MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	

Analysis Batch: 396461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	SPLP West	Solid	7470A	396418
MB 440-396227/1-C	Method Blank	SPLP West	Solid	7470A	396418
LCS 440-396227/2-C	Lab Control Sample	SPLP West	Solid	7470A	396418
440-180360-A-1-L MS	Matrix Spike	SPLP West	Solid	7470A	396418
440-180360-A-1-M MSD	Matrix Spike Duplicate	SPLP West	Solid	7470A	396418

Analysis Batch: 396876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	SPLP West	Solid	6010B	396411
MB 440-396227/1-B	Method Blank	SPLP West	Solid	6010B	396411
LCS 440-396227/2-B	Lab Control Sample	SPLP West	Solid	6010B	396411
440-180360-A-1-I MS	Matrix Spike	SPLP West	Solid	6010B	396411
440-180360-A-1-J MSD	Matrix Spike Duplicate	SPLP West	Solid	6010B	396411

Prep Batch: 396909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-2	DFSEP6-3	SPLP West	Solid	3010A	396424
440-180371-4	DFSEP7-1	SPLP West	Solid	3010A	396424
440-180371-5	DFSEP7-3	SPLP West	Solid	3010A	396424
440-180371-7	DFSEP8-1	SPLP West	Solid	3010A	396424
440-180371-8	DFSEP8-3	SPLP West	Solid	3010A	396424
MB 440-396424/1-B	Method Blank	SPLP West	Solid	3010A	396424
LCS 440-396424/2-B	Lab Control Sample	SPLP West	Solid	3010A	396424
440-180371-2 MS	DFSEP6-3	SPLP West	Solid	3010A	396424
440-180371-2 MSD	DFSEP6-3	SPLP West	Solid	3010A	396424

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Metals (Continued)

Analysis Batch: 396922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	Total/NA	Solid	7471A	396446
440-180371-2	DFSEP6-3	Total/NA	Solid	7471A	396446
440-180371-4	DFSEP7-1	Total/NA	Solid	7471A	396446
440-180371-5	DFSEP7-3	Total/NA	Solid	7471A	396446
440-180371-7	DFSEP8-1	Total/NA	Solid	7471A	396446
440-180371-8	DFSEP8-3	Total/NA	Solid	7471A	396446
MB 440-396446/1-A	Method Blank	Total/NA	Solid	7471A	396446
LCS 440-396446/2-A	Lab Control Sample	Total/NA	Solid	7471A	396446
440-180360-A-1-O MS	Matrix Spike	Total/NA	Solid	7471A	396446
440-180360-A-1-P MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	396446

Prep Batch: 396930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-2	DFSEP6-3	SPLP West	Solid	7470A	396424
440-180371-4	DFSEP7-1	SPLP West	Solid	7470A	396424
440-180371-5	DFSEP7-3	SPLP West	Solid	7470A	396424
440-180371-7	DFSEP8-1	SPLP West	Solid	7470A	396424
440-180371-8	DFSEP8-3	SPLP West	Solid	7470A	396424
MB 440-396424/1-C	Method Blank	SPLP West	Solid	7470A	396424
LCS 440-396424/2-C	Lab Control Sample	SPLP West	Solid	7470A	396424
440-180371-2 MS	DFSEP6-3	SPLP West	Solid	7470A	396424
440-180371-2 MSD	DFSEP6-3	SPLP West	Solid	7470A	396424

Analysis Batch: 397182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-2	DFSEP6-3	SPLP West	Solid	6010B	396909
440-180371-4	DFSEP7-1	SPLP West	Solid	6010B	396909
440-180371-5	DFSEP7-3	SPLP West	Solid	6010B	396909
440-180371-7	DFSEP8-1	SPLP West	Solid	6010B	396909
440-180371-8	DFSEP8-3	SPLP West	Solid	6010B	396909
MB 440-396424/1-B	Method Blank	SPLP West	Solid	6010B	396909
LCS 440-396424/2-B	Lab Control Sample	SPLP West	Solid	6010B	396909
440-180371-2 MS	DFSEP6-3	SPLP West	Solid	6010B	396909
440-180371-2 MSD	DFSEP6-3	SPLP West	Solid	6010B	396909

Analysis Batch: 397387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-2	DFSEP6-3	SPLP West	Solid	7470A	396930
440-180371-4	DFSEP7-1	SPLP West	Solid	7470A	396930
440-180371-5	DFSEP7-3	SPLP West	Solid	7470A	396930
440-180371-7	DFSEP8-1	SPLP West	Solid	7470A	396930
440-180371-8	DFSEP8-3	SPLP West	Solid	7470A	396930
MB 440-396424/1-C	Method Blank	SPLP West	Solid	7470A	396930
LCS 440-396424/2-C	Lab Control Sample	SPLP West	Solid	7470A	396930
440-180371-2 MS	DFSEP6-3	SPLP West	Solid	7470A	396930
440-180371-2 MSD	DFSEP6-3	SPLP West	Solid	7470A	396930

General Chemistry

Leach Batch: 396012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	Soluble	Solid	DI Leach	
440-180371-2	DFSEP6-3	Soluble	Solid	DI Leach	
440-180360-A-11-C DU	Duplicate	Soluble	Solid	DI Leach	

Leach Batch: 396021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-4	DFSEP7-1	Soluble	Solid	DI Leach	
440-180371-5	DFSEP7-3	Soluble	Solid	DI Leach	
440-180371-7	DFSEP8-1	Soluble	Solid	DI Leach	
440-180371-8	DFSEP8-3	Soluble	Solid	DI Leach	
440-180371-4 DU	DFSEP7-1	Soluble	Solid	DI Leach	

Analysis Batch: 396034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	Soluble	Solid	9045C	396012
440-180371-2	DFSEP6-3	Soluble	Solid	9045C	396012
440-180360-A-11-C DU	Duplicate	Soluble	Solid	9045C	396012

Analysis Batch: 396045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-4	DFSEP7-1	Soluble	Solid	9045C	396021
440-180371-5	DFSEP7-3	Soluble	Solid	9045C	396021
440-180371-7	DFSEP8-1	Soluble	Solid	9045C	396021
440-180371-8	DFSEP8-3	Soluble	Solid	9045C	396021
440-180371-4 DU	DFSEP7-1	Soluble	Solid	9045C	396021

Prep Batch: 396370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	Total/NA	Solid	9010B	
440-180371-2	DFSEP6-3	Total/NA	Solid	9010B	
440-180371-4	DFSEP7-1	Total/NA	Solid	9010B	
440-180371-5	DFSEP7-3	Total/NA	Solid	9010B	
440-180371-7	DFSEP8-1	Total/NA	Solid	9010B	
440-180371-8	DFSEP8-3	Total/NA	Solid	9010B	
MB 440-396370/1-A	Method Blank	Total/NA	Solid	9010B	
LCS 440-396370/2-A	Lab Control Sample	Total/NA	Solid	9010B	
440-180371-1 MS	DFSEP6-1	Total/NA	Solid	9010B	
440-180371-1 MSD	DFSEP6-1	Total/NA	Solid	9010B	

Analysis Batch: 396652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-1	DFSEP6-1	Total/NA	Solid	9014	396370
440-180371-2	DFSEP6-3	Total/NA	Solid	9014	396370
440-180371-4	DFSEP7-1	Total/NA	Solid	9014	396370
440-180371-5	DFSEP7-3	Total/NA	Solid	9014	396370
440-180371-7	DFSEP8-1	Total/NA	Solid	9014	396370
440-180371-8	DFSEP8-3	Total/NA	Solid	9014	396370
MB 440-396370/1-A	Method Blank	Total/NA	Solid	9014	396370
LCS 440-396370/2-A	Lab Control Sample	Total/NA	Solid	9014	396370
440-180371-1 MS	DFSEP6-1	Total/NA	Solid	9014	396370
440-180371-1 MSD	DFSEP6-1	Total/NA	Solid	9014	396370

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Dudek & Associates
TestAmerica Job ID: 440-180371-1
Project/Site: Dodge Flat

Laboratory: TestAmerica Irvine

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	06-30-18
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 17-003R	01-23-18
Hawaii	State Program	9	N/A	01-29-18
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-18
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Test America

SilverState Analytical Laboratories — Sierra Environmental Monitoring — EnviroTech Danielle Roberts

ssalabs.com sem-analytical.com envirotechonline.com

3626 E. SUNSET RD., STE 100, LAS VEGAS, NV 89120
Phone (702) 873-4478 Fax: (702) 873-7967 (EPA#: NV00930, CA2885)

1135 FINANCIAL BOULEVARD, RENO, NV 89502
Phone (775) 857-2400 Fax: (888) 398-7002 (EPA#: NV00015, CA2526)

CHAIN-OF-CUSTODY-RECORD

Page 1 of 2

Report Results To:
Report Attention: Nicole Peacock
Project Number:
Company: Dudek
Mailing Address: 605 Third St
City, State, Zip: Encinitas, CA 92024
Phone: 760 479 4152
Email / Fax: npeacock@dudek.com

Send Invoice To:
Invoice Attention: Nicole Peacock
PO#:
Quote #:
Company:
Mailing Address: Same
City, State, Zip:
Phone:
Email / Fax:

COMPLIANCE MONITORING? Yes ☐ No ☐
NEW ADDRESS? Results: ☐ Invoice: ☐

Applicable Program: SDWA ☐ CWA ☐ RCRA ☐ Mining ☐ Other ______

QC Level Report: I II III IV
NOTE: Surcharges apply to Level II, III and IV reports

Send Results Via: Mail: ☐ Email: ☐ Fax: ☐

Send Invoice Via: Mail: ☐ Email: ☐ Fax: ☐

Field Measurements
On-Site pH: Chlorine:
Temperature: Other:

Sampled by: Susan Smith Signature: [signature]

I attest to the validity and authenticity of the sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time is considered fraud and may be grounds for legal action.

Standard: ☐ Standard TAT 7-10 Business Days. Note that some tests vary.

Rush
☐ Same Day: ☐ 3 Day: ☐ Other (specify): ______
☐ 1 Day: ☐ 4 Day:
☐ 2 Day: ☒ 5 Day:

Rush results will be issued after 4:00 p.m.

NOTE: A Rush Surcharge is applied for rush samples

Other Pertinent Information / Special Instructions

ANALYSES REQUESTED

440-180371 Chain of Custody

Date Sampled	Time Sampled	Sample Identification	SSAL - SEM Lab No.	Comp. Grab	Matrix*	Preservative**	Number / Type of Containers***	Title 22 Metals	SPLP Metals	Total cyanide	pH	Hold	Metals / Comments
3/22/17	1513	DFSEP6-1			SS	6	1	X	X	X	X		Acetate liner
	1514	DFSEP6-3			SS	6	1	X	X	X	X		
	1515	DFSEP6-5			SS	6	1					X	
	1545	DFSEP7-1			SS	6	1	X	X	X	X		
	1546	DFSEP7-3			SS	6	1	X	X	X	X		
	1547	DFSEP7-5			SS	6	1					X	
	1605	DFSEP8-1			SS	6	1	X	X	X	X		
3/22/17	1606	DFSEP8-3			SS	6	1	X	X	X	X		Acetate liner

	Signature	Print Name	Company	Date	Time
Relinquished By:	[signature]	Dudek	Susan Smith	3/22/17	500 pm
Received By:	Fed Ex				
Relinquished By:					
Received By:					
Relinquished By:					
Received By:	Olga Ornelas	Olga Ornelas	TAZ	3/23/17	9:45
Authorized By:					

Authorization is required to process samples. This obligates your organization for service fees. SSAL Standard T & C's or other written agreement applies. If collections or legal services are required to recover said fees, your organization will be responsible for all fees and costs in addition to service fees.

Samples are discarded 30 days after results are reported unless other arrangements are made and storage fees may apply. The analytical results associated with this COC apply only to these samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.

Matrix* DW-Drinking Water, WW-Waste Water, GW-Ground Water, SW-Surface Water, SS-Soil, S-Solid, OT-Other
Preservative** 1=H_2SO_4, 2=HNO_3, 3=HCl, 4=NaOH, 5=$Na_2S_2O_3$, 6=None, 7=Other
Container*** P-Plastic, G-Glass, V-Voa Vial, OT-Other

4.1°c/3.8°c IR-77

T#: 7859 9884 9222

Test America

SilverState Analytical Laboratories — Sierra Environmental Monitoring — EnviroTech

Danielle Roberts

ssalabs.com sem-analytical.com envirotechonline.com

☐ 3626 E. SUNSET RD., STE 100, LAS VEGAS, NV 89120
Phone (702) 873-4478 Fax: (702) 873-7967 (EPA#: NV00930, CA2885)

■ 1135 FINANCIAL BOULEVARD, RENO, NV 89502
Phone (775) 857-2400 Fax: (888) 398-7002 (EPA#: NV00015, CA2526)

CHAIN-OF-CUSTODY-RECORD

Report Results To:

Report Attention: Nicole Peacock
Project Number:
Company: Dudek
Mailing Address: 605 Third St
City, State, Zip: Encinitas CA 92024
Phone:
Email / Fax: npeacock@dudek.com

Send Invoice To:

Invoice Attention: Nicole Peacock
PO#
Quote #
Company:
Mailing Address: Same
City, State, Zip:
Phone:
Email / Fax:

COMPLIANCE MONITORING? Yes ☐ No ☐
NEW ADDRESS? Results: ☐ Invoice: ☐

Applicable Program
SDWA ☐ CWA ☐ RCRA ☐ Mining ☐ Other ______

QC Level Report
I II III IV
NOTE: Surcharges apply to Level II, III and IV reports

Send Results Via:
Mail: ☐ Email: ☐ Fax: ☐

Send Invoice Via:
Mail: ☐ Email: ☐ Fax: ☐

Field Measurements
On-Site pH: Chlorine:
Temperature: Other:

Sampled by: Signature: AM L

I attest to the validity and authenticity of the sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time is considered fraud and may be grounds for legal action.

Standard: ☐ Standard TAT 7-10 Business Days. Note that some tests vary

Rush
☐ Same Day: ☐ 3 Day: ☐ Other (specify): ______
☐ 1 Day: ☐ 4 Day:
☐ 2 Day: ☐ 5 Day:

Rush results will be issued after 4:00 p.m.

NOTE: A Rush Surcharge is applied for rush samples

Other Pertinent Information / Special Instructions

ANALYSES REQUESTED

Date Sampled	Time Sampled	Sample Identification	SSAL - SEM Lab No.	Comp. Grab	Matrix*	Preservative**	Number / Type of Containers ***	Hold										
3/24/17	1607	DFSEP8-5			SS	6	1	X										
			SN															

Metals: Acetate liner

COMMENTS:

	Signature	Print Name	Company	Date	Time
Relinquished By:	Susan Smith	AM L	Dudek	3/22/17	500 pm
Received By:	FedEx				
Relinquished By:					
Received By:					
Relinquished By:					
Received By:	Olga Ornelas	Olga Ornelas	TAZ	3/23/17	9:45
Authorized By:					

Authorization is required to process samples. This obligates your organization for service fees. SSAL Standard T & C's or other written agreement applies. If collections or legal services are required to recover said fees, your organization will be responsible for all fees and costs in addition to service fees.

Samples are discarded 30 days after results are reported unless other arrangements are made and storage fees may apply. The analytical results associated with this COC apply only to these samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.

Matrix* DW-Drinking Water, WW-Waste Water, GW-Ground Water, SW-Surface Water, SS-Soil, S-Solid, OT-Other
Preservative** 1=H_2SO_4, 2=HNO_3, 3=HCl, 4=NaOH, 5=$Na_2S_2O_3$, 6=None, 7=Other

Container*** P-Plastic, G-Glass, V-Voa Vial, OT-Other

Login Sample Receipt Checklist

Client: Dudek & Associates | Job Number: 440-180371-1

Login Number: 180371 | **List Source: TestAmerica Irvine**
List Number: 1
Creator: Garcia, Veronica G

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-180360-2
Client Project/Site: Dodge Flat

For:
Dudek & Associates
750 Second Street
Encinitas, California 92024

Attn: Nicole Peacock

Authorized for release by:
4/11/2017 2:18:40 PM
Janice Hsu, Project Manager I
janice.hsu@testamericainc.com

Designee for

Danielle Roberts, Senior Project Manager
(949)261-1022
danielle.roberts@testamericainc.com

LINKS

Review your project results through Total Access

Have a Question? Ask The Expert

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Sample Summary

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-180360-9	DFSEP3-5	Solid	03/22/17 14:17	03/23/17 09:45
440-180360-12	DFSEP4-5	Solid	03/22/17 14:44	03/23/17 09:45
440-180360-15	DFSEP5-5	Solid	03/22/17 14:57	03/23/17 09:45

Case Narrative

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-2

Job ID: 440-180360-2

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-180360-2

Comments
No additional comments.

Receipt
The samples were received on 3/23/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. No analysis requested for samples 440-180360-7 and 440-180360-8. They are not indicated on Hold either. A container was received for each of them. No analysis were logged in and no NCM was created.

Login by Veronica

Metals
Method(s) 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-399118 and analytical batch 440-399251 were outside control limits for Barium and Antimony. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.(440-180593-E-25-G MS) and (440-180593-E-25-H MS)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample ID: DFSEP3-5

Lab Sample ID: 440-180360-9
Date Collected: 03/22/17 14:17
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	5.0	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Arsenic	**9.6**		3.0	1.5	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Barium	**190**		1.5	0.74	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Beryllium	**0.62**		0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Cadmium	**0.26**	**J**	0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Chromium	**30**		0.99	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Cobalt	**11**		0.99	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Copper	**30**		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Lead	**7.0**		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Molybdenum	ND		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Nickel	**19**		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Selenium	ND		3.0	1.7	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Thallium	**5.1**	**J**	9.9	5.0	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Vanadium	**97**		0.99	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Zinc	**71**		5.0	2.5	mg/Kg		04/10/17 08:38	04/10/17 16:57	5
Silver	ND		1.5	0.74	mg/Kg		04/10/17 08:38	04/10/17 16:57	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.018**	**J**	0.020	0.012	mg/Kg		04/05/17 16:39	04/05/17 20:07	1

Client Sample ID: DFSEP4-5

Lab Sample ID: 440-180360-12
Date Collected: 03/22/17 14:44
Matrix: Solid
Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10	5.0	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Arsenic	**12**		3.0	1.5	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Barium	**170**		1.5	0.75	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Beryllium	**0.87**		0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Cadmium	**0.39**	**J**	0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Chromium	**30**		1.0	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Cobalt	**16**		1.0	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Copper	**41**		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Lead	**10**		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Molybdenum	ND		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Nickel	**21**		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Selenium	ND		3.0	1.7	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Thallium	ND		10	5.0	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Vanadium	**83**		1.0	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Zinc	**88**		5.0	2.5	mg/Kg		04/10/17 08:38	04/10/17 16:59	5
Silver	ND		1.5	0.75	mg/Kg		04/10/17 08:38	04/10/17 16:59	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.082**		0.020	0.012	mg/Kg		04/05/17 16:39	04/05/17 20:16	1

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-2

Client Sample ID: DFSEP5-5

Lab Sample ID: 440-180360-15

Date Collected: 03/22/17 14:57
Date Received: 03/23/17 09:45

Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	5.0	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Arsenic	**8.4**		3.0	1.5	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Barium	**190**		1.5	0.74	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Beryllium	**0.76**		0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Cadmium	**0.37**	**J**	0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Chromium	**31**		0.99	0.50	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Cobalt	**14**		0.99	0.50	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Copper	**32**		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Lead	**8.1**		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Molybdenum	ND		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Nickel	**24**		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Selenium	ND		3.0	1.7	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Thallium	**6.7**	**J**	9.9	5.0	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Vanadium	**100**		0.99	0.50	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Zinc	**81**		5.0	2.5	mg/Kg		04/10/17 08:38	04/10/17 17:01	5
Silver	ND		1.5	0.74	mg/Kg		04/10/17 08:38	04/10/17 17:01	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.52**		0.020	0.012	mg/Kg		04/05/17 16:39	04/05/17 20:18	1

Method Summary

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-2

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL IRV
7471A	Mercury (CVAA)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client Sample ID: DFSEP3-5
Lab Sample ID: 440-180360-9
Date Collected: 03/22/17 14:17
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			2.02 g	50 mL	399118	04/10/17 08:38	DT	TAL IRV
Total/NA	Analysis	6010B		5			399251	04/10/17 16:57	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	398328	04/05/17 16:39	DB	TAL IRV
Total/NA	Analysis	7471A		1			398521	04/05/17 20:07	DB	TAL IRV

Client Sample ID: DFSEP4-5
Lab Sample ID: 440-180360-12
Date Collected: 03/22/17 14:44
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			2.01 g	50 mL	399118	04/10/17 08:38	DT	TAL IRV
Total/NA	Analysis	6010B		5			399251	04/10/17 16:59	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	398328	04/05/17 16:39	DB	TAL IRV
Total/NA	Analysis	7471A		1			398521	04/05/17 20:16	DB	TAL IRV

Client Sample ID: DFSEP5-5
Lab Sample ID: 440-180360-15
Date Collected: 03/22/17 14:57
Matrix: Solid
Date Received: 03/23/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			2.02 g	50 mL	399118	04/10/17 08:38	DT	TAL IRV
Total/NA	Analysis	6010B		5			399251	04/10/17 17:01	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	398328	04/05/17 16:39	DB	TAL IRV
Total/NA	Analysis	7471A		1			398521	04/05/17 20:18	DB	TAL IRV

Laboratory References:
TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-2

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-399118/1-A ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 399118

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10	5.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Arsenic	ND		3.0	1.5	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Barium	ND		1.5	0.75	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Beryllium	ND		0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Cadmium	ND		0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Chromium	ND		1.0	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Cobalt	ND		1.0	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Copper	ND		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Lead	ND		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Molybdenum	ND		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Nickel	ND		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Selenium	ND		3.0	1.7	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Thallium	ND		10	5.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Vanadium	ND		1.0	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Zinc	ND		5.0	2.5	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Silver	ND		1.5	0.75	mg/Kg		04/10/17 08:38	04/10/17 16:34	5

Lab Sample ID: LCS 440-399118/2-A ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 399118

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	50.0	54.0		mg/Kg		108	80 - 120
Arsenic	50.0	52.8		mg/Kg		106	80 - 120
Barium	50.0	53.1		mg/Kg		106	80 - 120
Beryllium	50.0	51.9		mg/Kg		104	80 - 120
Cadmium	50.0	50.7		mg/Kg		101	80 - 120
Chromium	50.0	53.0		mg/Kg		106	80 - 120
Cobalt	50.0	54.9		mg/Kg		110	80 - 120
Copper	50.0	54.2		mg/Kg		108	80 - 120
Lead	50.0	52.6		mg/Kg		105	80 - 120
Molybdenum	50.0	52.5		mg/Kg		105	80 - 120
Nickel	50.0	52.3		mg/Kg		105	80 - 120
Selenium	50.0	48.3		mg/Kg		97	80 - 120
Thallium	50.0	51.2		mg/Kg		102	80 - 120
Vanadium	50.0	53.2		mg/Kg		106	80 - 120
Zinc	50.0	52.4		mg/Kg		105	80 - 120
Silver	25.0	25.9		mg/Kg		104	80 - 120

Lab Sample ID: 440-180593-E-25-G MS ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 399118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	F1	50.0	32.2	F1	mg/Kg		64	75 - 125
Arsenic	19		50.0	67.5		mg/Kg		98	75 - 125
Barium	37	F1	50.0	101	F1	mg/Kg		129	75 - 125
Beryllium	0.70		50.0	49.3		mg/Kg		97	75 - 125

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180360-2

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-180593-E-25-G MS ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 399118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		50.0	44.5		mg/Kg		89	75 - 125
Chromium	30		50.0	79.3		mg/Kg		99	75 - 125
Cobalt	3.2		50.0	51.8		mg/Kg		97	75 - 125
Copper	15		50.0	70.4		mg/Kg		110	75 - 125
Lead	6.3		50.0	53.0		mg/Kg		93	75 - 125
Molybdenum	1.1	J	50.0	46.4		mg/Kg		91	75 - 125
Nickel	13		50.0	62.2		mg/Kg		98	75 - 125
Selenium	ND		50.0	43.9		mg/Kg		88	75 - 125
Thallium	ND		50.0	47.2		mg/Kg		94	75 - 125
Vanadium	28		50.0	82.7		mg/Kg		110	75 - 125
Zinc	36		50.0	85.6		mg/Kg		99	75 - 125
Silver	ND		25.0	25.0		mg/Kg		100	75 - 125

Lab Sample ID: 440-180593-E-25-H MSD ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 399118

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND	F1	49.8	32.9	F1	mg/Kg		66	75 - 125	2	20
Arsenic	19		49.8	69.4		mg/Kg		102	75 - 125	3	20
Barium	37	F1	49.8	97.7		mg/Kg		122	75 - 125	4	20
Beryllium	0.70		49.8	50.0		mg/Kg		99	75 - 125	1	20
Cadmium	ND		49.8	44.3		mg/Kg		89	75 - 125	0	20
Chromium	30		49.8	85.0		mg/Kg		111	75 - 125	7	20
Cobalt	3.2		49.8	52.7		mg/Kg		100	75 - 125	2	20
Copper	15		49.8	71.5		mg/Kg		113	75 - 125	2	20
Lead	6.3		49.8	53.8		mg/Kg		95	75 - 125	1	20
Molybdenum	1.1	J	49.8	47.7		mg/Kg		94	75 - 125	3	20
Nickel	13		49.8	63.4		mg/Kg		101	75 - 125	2	20
Selenium	ND		49.8	44.2		mg/Kg		89	75 - 125	1	20
Thallium	ND		49.8	49.0		mg/Kg		98	75 - 125	4	20
Vanadium	28		49.8	83.1		mg/Kg		111	75 - 125	0	20
Zinc	36		49.8	85.5		mg/Kg		99	75 - 125	0	20
Silver	ND		24.9	25.8		mg/Kg		104	75 - 125	3	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 440-398328/1-A
Matrix: Solid
Analysis Batch: 398521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398328

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.012	mg/Kg		04/05/17 16:39	04/05/17 20:02	1

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 440-398328/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 398521 — **Prep Batch: 398328**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.800	0.914		mg/Kg		114	80 - 120		

Lab Sample ID: 440-180360-9 MS — **Client Sample ID: DFSEP3-5**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 398521 — **Prep Batch: 398328**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.018	J	0.784	0.741		mg/Kg		92	70 - 130		

Lab Sample ID: 440-180360-9 MSD — **Client Sample ID: DFSEP3-5**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 398521 — **Prep Batch: 398328**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.018	J	0.800	0.738		mg/Kg		90	70 - 130	0	20

Metals

Prep Batch: 398328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-9	DFSEP3-5	Total/NA	Solid	7471A	
440-180360-12	DFSEP4-5	Total/NA	Solid	7471A	
440-180360-15	DFSEP5-5	Total/NA	Solid	7471A	
MB 440-398328/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 440-398328/2-A	Lab Control Sample	Total/NA	Solid	7471A	
440-180360-9 MS	DFSEP3-5	Total/NA	Solid	7471A	
440-180360-9 MSD	DFSEP3-5	Total/NA	Solid	7471A	

Analysis Batch: 398521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-9	DFSEP3-5	Total/NA	Solid	7471A	398328
440-180360-12	DFSEP4-5	Total/NA	Solid	7471A	398328
440-180360-15	DFSEP5-5	Total/NA	Solid	7471A	398328
MB 440-398328/1-A	Method Blank	Total/NA	Solid	7471A	398328
LCS 440-398328/2-A	Lab Control Sample	Total/NA	Solid	7471A	398328
440-180360-9 MS	DFSEP3-5	Total/NA	Solid	7471A	398328
440-180360-9 MSD	DFSEP3-5	Total/NA	Solid	7471A	398328

Prep Batch: 399118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-9	DFSEP3-5	Total/NA	Solid	3050B	
440-180360-12	DFSEP4-5	Total/NA	Solid	3050B	
440-180360-15	DFSEP5-5	Total/NA	Solid	3050B	
MB 440-399118/1-A ^5	Method Blank	Total/NA	Solid	3050B	
LCS 440-399118/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
440-180593-E-25-G MS ^5	Matrix Spike	Total/NA	Solid	3050B	
440-180593-E-25-H MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Analysis Batch: 399251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180360-9	DFSEP3-5	Total/NA	Solid	6010B	399118
440-180360-12	DFSEP4-5	Total/NA	Solid	6010B	399118
440-180360-15	DFSEP5-5	Total/NA	Solid	6010B	399118
MB 440-399118/1-A ^5	Method Blank	Total/NA	Solid	6010B	399118
LCS 440-399118/2-A ^5	Lab Control Sample	Total/NA	Solid	6010B	399118
440-180593-E-25-G MS ^5	Matrix Spike	Total/NA	Solid	6010B	399118
440-180593-E-25-H MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	6010B	399118

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Laboratory: TestAmerica Irvine

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	06-30-18
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 17-003R	01-23-18
Hawaii	State Program	9	N/A	01-29-18
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-18
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Test America

SilverState Analytical Laboratories — Sierra Environmental Monitoring — EnviroTech

ssalabs.com sem-analytical.com envirotechonline.com

☐ 3626 E. SUNSET RD., STE 100, LAS VEGAS, NV 89120
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☐ 1135 FINANCIAL BOULEVARD, RENO, NV 89502
Phone (775) 857-2400 Fax: (888) 398-7002 (EPA#: NV00015, CA2526)

CHAIN-OF-CUSTODY-RECORD

Page 1 of 2

Report Results To:
Report Attention: Nicole Peacock
Project Number: Dodge Flat
Company: DUDEK
Mailing Address: 605 Third St
City, State, Zip: Encinitas, CA 92024
Phone: 760-479-4152
Email / Fax: npeacock@dudek.com

Send Invoice To:
Invoice Attention: Nicole Peacock
PO#
Quote #
Company: Dudek
Mailing Address: Same
City, State, Zip:
Phone:
Email / Fax

440-180360 Chain of Custody

COMPLIANCE MONITORING? Yes ☐ No ☐
NEW ADDRESS? Results ☐ Invoice ☐

Applicable Program
SDWA ☐ CWA ☐ RCRA ☐
Mining ☐ Other ______

QC Level Report
I II III IV
NOTE Surcharges apply to Level II, III and IV reports

Send Results Via:
Mail ☐ Email: ☐ Fax: ☐

Send Invoice Via:
Mail ☐ Email: ☐ Fax: ☐

Field Measurements
On-Site pH: Chlorine:
Temperature: Other:

Sampled by: Susan Smith Signature: [signature]

I attest to the validity and authenticity of the sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time is considered fraud and may be grounds for legal action.

Standard: ☒ ~~Standard TAT 7-10 Business Days.~~ Note that some tests vary.

Rush
Same Day: ☐ 3 Day: ☐ Other (specify): ______
1 Day: ☐ 4 Day: ☐
2 Day: ☐ 5 Day: ☒
Rush results will be issued after 4:00 p.m.

NOTE: A Rush Surcharge is applied for rush samples

Other Pertinent Information / Special Instructions

ANALYSES REQ

Date Sampled	Time Sampled	Sample Identification	SSAL - SEM Lab No.	Comp. Grab	Matrix*	Preservative**	Number / Type of Containers***	Title 22 metals	SPLP metals	Total cyanide	pH							HOLD	COMMENTS
3/22/17	1325	DFSEP1-1			SS	6	1	X	X	X	X								~~Metals~~ Acetate liner
	1326	DFSEP1-3			SS	6	1	X	X	X	X								
	1327	DFSEP1-5			SS	6	1											X	
	1339	DFSEP2-1			SS	6	1	X	X	X	X								
	1340	DFSEP2-3			SS	6	1	X	X	X	X								
	1341	DFSEP2-5			SS	6	1											X	
	1415	DFSEP3-1			SS	6	1												
3/22/17	1416	DFSEP3-3			SS	6	1												Acetate liner

	Signature	Print Name	Company	Date	Time
Relinquished By:	[signature]	Susan Smith	Dudek	3/22/17	5:00pm
Received By:	FedEx				
Relinquished By:					
Received By:					
Relinquished By:					
Received By:	Olga Ornelas	Olga Ornelas	TAI	3/23/17	9:45
Authorized By:					

Authorization is required to process samples. This obligates your organization for service fees. SSAL Standard T & C's or other written agreement applies. If collections or legal services are required to recover said fees, your organization will be responsible for all fees and costs in addition to service fees

Samples are discarded 30 days after results are reported unless other arrangements are made and storage fees may apply. The analytical results associated with this COC apply only to these samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.

2.9°C/2.6°C IR-77

Matrix* DW-Drinking Water, WW-Waste Water, GW-Ground Water, SW-Surface Water, SS-Soil, S-Solid, OT-Other
Preservative** 1=H_2SO_4, 2=HNO_3, 3=HCl, 4=NaOH, 5=$Na_2S_2O_3$, 6=None, 7=Other
Container*** P-Plastic, G-Glass, V-Voa Vial, OT-Other

T#: 7859 9884 9233

Test America

SilverState Analytical Laboratories — Sierra Environmental Monitoring — EnviroTech

Danielle Roberts

ssalabs.com sem-analytical.com envirotechonline.com

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Phone (775) 857-2400 Fax: (888) 398-7002 (EPA#: NV00015, CA2526)

CHAIN-OF-CUSTODY-RECORD

Report Results To:
Report Attention: Nicole Peacock
Project Number:
Company: Dudek
Mailing Address:
City, State, Zip: Same
Phone: Same
Email / Fax:

Send Invoice To:
Invoice Attention:
PO#
Quote #
Company:
Mailing Address:
City, State, Zip: Same
Phone:
Email / Fax:

COMPLIANCE MONITORING? Yes ☐ No ☐
NEW ADDRESS? Results: ☐ Invoice: ☐

Applicable Program
SDWA ☐ CWA ☐ RCRA ☐ Mining ☐ Other ______

QC Level Report
I II III IV
NOTE: Surcharges apply to Level II, III and IV reports

Send Results Via: Mail: ☐ Email: ☐ Fax: ☐

Send Invoice Via: Mail: ☐ Email: ☐ Fax: ☐

Field Measurements
On-Site pH: Chlorine:
Temperature: Other:

Sampled by: Susan Smith Signature: [signature]

I attest to the validity and authenticity of the sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time is considered fraud and may be grounds for legal action.

Standard: ☒ ~~Standard TAT 7-10 Business Days. Note that some tests vary.~~ SS
Rush
☐ Same Day: ☐ 3 Day: ☐ Other (specify): ______
☐ 1 Day: ☐ ~~4 Day:~~
☐ 2 Day: ☒ 5 Day:
Rush results will be issued after 4:00 p.m.

NOTE: A Rush Surcharge is applied for rush samples

Other Pertinent Information / Special Instructions

ANALYSES REQUESTED

Date Sampled	Time Sampled	Sample Identification	SSAL - SEM Lab No.	Comp. Grab	Matrix*	Preservative**	Number / Type of Containers***	Title 22 Metals	SPLP Metals	Total cyanide	pH							Hold	
3/22/17	1417	DFSEP3-5			SS	6	1											X	Metals: Acetate liner
	1442	DFSEP4-1				6	1	X	X	X	X								
	1443	DFSEP4-3				6	1	X	X	X	X								
	1444	DFSEP4-5				6	1											X	
	1455	DFSEP5-1				6	1	X	X	X	X								COMMENTS:
	1456	DFSEP5-3				6	1	X	X	X	X								
3/22/17	1457	DFSEP5-5			SS	6	1											X	Acetate liner

	Signature	Print Name	Company	Date	Time
Relinquished By:	[signature]	Susan Smith	Dudek	3/22/17	5:00pm
Received By:	FedEx				
Relinquished By:					
Received By:					
Relinquished By:					
Received By:	Olga Ornelas	Olga Ornelas	TAZ	3/23/17	9:45
Authorized By:					

Authorization is required to process samples. This obligates your organization for service fees. SSAL Standard T & C's or other written agreement applies. If collections or legal services are required to recover said fees, your organization will be responsible for all fees and costs in addition to service fees.

Samples are discarded 30 days after results are reported unless other arrangements are made and storage fees may apply. The analytical results associated with this COC apply only to these samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.

Matrix* DW-Drinking Water, WW-Waste Water, GW-Ground Water, SW-Surface Water, SS-Soil, S-Solid, OT-Other
Preservative** 1=H_2SO_4, 2=HNO_3, 3=HCl, 4=NaOH, 5=$Na_2S_2O_3$, 6=None, 7=Other

Container*** P-Plastic, G-Glass, V-Voa Vial, OT-Other

Login Sample Receipt Checklist

Client: Dudek & Associates

Job Number: 440-180360-2

Login Number: 180360
List Number: 1
Creator: Garcia, Veronica G

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-180371-2
Client Project/Site: Dodge Flat

For:
Dudek & Associates
750 Second Street
Encinitas, California 92024

Attn: Nicole Peacock

Authorized for release by:
4/11/2017 2:26:17 PM
Janice Hsu, Project Manager I
janice.hsu@testamericainc.com

Designee for

Danielle Roberts, Senior Project Manager
(949)261-1022
danielle.roberts@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-180371-3	DFSEP6-5	Solid	03/22/17 15:15	03/23/17 09:45

Job ID: 440-180371-2

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-180371-2

Comments
No additional comments.

Receipt
The samples were received on 3/23/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

Metals
Method(s) 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-399118 and analytical batch 440-399251 were outside control limits for Barium and Antimony. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.(440-180593-E-25-G MS) and (440-180593-E-25-H MS)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-2

Client Sample ID: DFSEP6-5

Lab Sample ID: 440-180371-3

Date Collected: 03/22/17 15:15

Matrix: Solid

Date Received: 03/23/17 09:45

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9	4.9	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Arsenic	ND		3.0	1.5	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Barium	**120**		1.5	0.74	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Beryllium	ND		0.49	0.25	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Cadmium	**0.29**	**J**	0.49	0.25	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Chromium	**14**		0.99	0.49	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Cobalt	ND		0.99	0.49	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Copper	**68**		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Lead	**1.7**	**J**	2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Molybdenum	**3.5**		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Nickel	**7.9**		2.0	0.99	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Selenium	**2.3**	**J**	3.0	1.7	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Thallium	ND		9.9	4.9	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Vanadium	**3.9**		0.99	0.49	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Zinc	**170**		4.9	2.5	mg/Kg		04/10/17 08:38	04/10/17 17:03	5
Silver	ND		1.5	0.74	mg/Kg		04/10/17 08:38	04/10/17 17:03	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.12**		0.020	0.012	mg/Kg		04/05/17 16:39	04/05/17 20:21	1

Method Summary

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL IRV
7471A	Mercury (CVAA)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client Sample ID: DFSEP6-5
Date Collected: 03/22/17 15:15
Date Received: 03/23/17 09:45

Lab Sample ID: 440-180371-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			2.03 g	50 mL	399118	04/10/17 08:38	DT	TAL IRV
Total/NA	Analysis	6010B		5			399251	04/10/17 17:03	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	398328	04/05/17 16:39	DB	TAL IRV
Total/NA	Analysis	7471A		1			398521	04/05/17 20:21	DB	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-2

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-399118/1-A ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 399118

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10	5.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Arsenic	ND		3.0	1.5	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Barium	ND		1.5	0.75	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Beryllium	ND		0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Cadmium	ND		0.50	0.25	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Chromium	ND		1.0	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Cobalt	ND		1.0	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Copper	ND		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Lead	ND		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Molybdenum	ND		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Nickel	ND		2.0	1.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Selenium	ND		3.0	1.7	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Thallium	ND		10	5.0	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Vanadium	ND		1.0	0.50	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Zinc	ND		5.0	2.5	mg/Kg		04/10/17 08:38	04/10/17 16:34	5
Silver	ND		1.5	0.75	mg/Kg		04/10/17 08:38	04/10/17 16:34	5

Lab Sample ID: LCS 440-399118/2-A ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 399118

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	50.0	54.0		mg/Kg		108	80 - 120
Arsenic	50.0	52.8		mg/Kg		106	80 - 120
Barium	50.0	53.1		mg/Kg		106	80 - 120
Beryllium	50.0	51.9		mg/Kg		104	80 - 120
Cadmium	50.0	50.7		mg/Kg		101	80 - 120
Chromium	50.0	53.0		mg/Kg		106	80 - 120
Cobalt	50.0	54.9		mg/Kg		110	80 - 120
Copper	50.0	54.2		mg/Kg		108	80 - 120
Lead	50.0	52.6		mg/Kg		105	80 - 120
Molybdenum	50.0	52.5		mg/Kg		105	80 - 120
Nickel	50.0	52.3		mg/Kg		105	80 - 120
Selenium	50.0	48.3		mg/Kg		97	80 - 120
Thallium	50.0	51.2		mg/Kg		102	80 - 120
Vanadium	50.0	53.2		mg/Kg		106	80 - 120
Zinc	50.0	52.4		mg/Kg		105	80 - 120
Silver	25.0	25.9		mg/Kg		104	80 - 120

Lab Sample ID: 440-180593-E-25-G MS ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 399118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	F1	50.0	32.2	F1	mg/Kg		64	75 - 125
Arsenic	19		50.0	67.5		mg/Kg		98	75 - 125
Barium	37	F1	50.0	101	F1	mg/Kg		129	75 - 125
Beryllium	0.70		50.0	49.3		mg/Kg		97	75 - 125

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-180593-E-25-G MS ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 399118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		50.0	44.5		mg/Kg		89	75 - 125
Chromium	30		50.0	79.3		mg/Kg		99	75 - 125
Cobalt	3.2		50.0	51.8		mg/Kg		97	75 - 125
Copper	15		50.0	70.4		mg/Kg		110	75 - 125
Lead	6.3		50.0	53.0		mg/Kg		93	75 - 125
Molybdenum	1.1	J	50.0	46.4		mg/Kg		91	75 - 125
Nickel	13		50.0	62.2		mg/Kg		98	75 - 125
Selenium	ND		50.0	43.9		mg/Kg		88	75 - 125
Thallium	ND		50.0	47.2		mg/Kg		94	75 - 125
Vanadium	28		50.0	82.7		mg/Kg		110	75 - 125
Zinc	36		50.0	85.6		mg/Kg		99	75 - 125
Silver	ND		25.0	25.0		mg/Kg		100	75 - 125

Lab Sample ID: 440-180593-E-25-H MSD ^5
Matrix: Solid
Analysis Batch: 399251

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 399118

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND	F1	49.8	32.9	F1	mg/Kg		66	75 - 125	2	20
Arsenic	19		49.8	69.4		mg/Kg		102	75 - 125	3	20
Barium	37	F1	49.8	97.7		mg/Kg		122	75 - 125	4	20
Beryllium	0.70		49.8	50.0		mg/Kg		99	75 - 125	1	20
Cadmium	ND		49.8	44.3		mg/Kg		89	75 - 125	0	20
Chromium	30		49.8	85.0		mg/Kg		111	75 - 125	7	20
Cobalt	3.2		49.8	52.7		mg/Kg		100	75 - 125	2	20
Copper	15		49.8	71.5		mg/Kg		113	75 - 125	2	20
Lead	6.3		49.8	53.8		mg/Kg		95	75 - 125	1	20
Molybdenum	1.1	J	49.8	47.7		mg/Kg		94	75 - 125	3	20
Nickel	13		49.8	63.4		mg/Kg		101	75 - 125	2	20
Selenium	ND		49.8	44.2		mg/Kg		89	75 - 125	1	20
Thallium	ND		49.8	49.0		mg/Kg		98	75 - 125	4	20
Vanadium	28		49.8	83.1		mg/Kg		111	75 - 125	0	20
Zinc	36		49.8	85.5		mg/Kg		99	75 - 125	0	20
Silver	ND		24.9	25.8		mg/Kg		104	75 - 125	3	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 440-398328/1-A
Matrix: Solid
Analysis Batch: 398521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398328

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.012	mg/Kg		04/05/17 16:39	04/05/17 20:02	1

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 440-398328/2-A
Matrix: Solid
Analysis Batch: 398521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398328

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.800	0.914		mg/Kg		114	80 - 120		

Lab Sample ID: 440-180360-A-9-B MS
Matrix: Solid
Analysis Batch: 398521

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 398328

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.018	J	0.784	0.741		mg/Kg		92	70 - 130		

Lab Sample ID: 440-180360-A-9-C MSD
Matrix: Solid
Analysis Batch: 398521

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 398328

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.018	J	0.800	0.738		mg/Kg		90	70 - 130	0	20

1 2 3 4 5 6 7 8 9 10 11 12 13

Metals

Prep Batch: 398328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-3	DFSEP6-5	Total/NA	Solid	7471A	
MB 440-398328/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 440-398328/2-A	Lab Control Sample	Total/NA	Solid	7471A	
440-180360-A-9-B MS	Matrix Spike	Total/NA	Solid	7471A	
440-180360-A-9-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	

Analysis Batch: 398521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-3	DFSEP6-5	Total/NA	Solid	7471A	398328
MB 440-398328/1-A	Method Blank	Total/NA	Solid	7471A	398328
LCS 440-398328/2-A	Lab Control Sample	Total/NA	Solid	7471A	398328
440-180360-A-9-B MS	Matrix Spike	Total/NA	Solid	7471A	398328
440-180360-A-9-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	398328

Prep Batch: 399118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-3	DFSEP6-5	Total/NA	Solid	3050B	
MB 440-399118/1-A ^5	Method Blank	Total/NA	Solid	3050B	
LCS 440-399118/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
440-180593-E-25-G MS ^5	Matrix Spike	Total/NA	Solid	3050B	
440-180593-E-25-H MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Analysis Batch: 399251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180371-3	DFSEP6-5	Total/NA	Solid	6010B	399118
MB 440-399118/1-A ^5	Method Blank	Total/NA	Solid	6010B	399118
LCS 440-399118/2-A ^5	Lab Control Sample	Total/NA	Solid	6010B	399118
440-180593-E-25-G MS ^5	Matrix Spike	Total/NA	Solid	6010B	399118
440-180593-E-25-H MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	6010B	399118

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Dudek & Associates
Project/Site: Dodge Flat

TestAmerica Job ID: 440-180371-2

Laboratory: TestAmerica Irvine

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	06-30-18
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 17-003R	01-23-18
Hawaii	State Program	9	N/A	01-29-18
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-18
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Test America

SilverState Analytical Laboratories — Sierra Environmental Monitoring — EnviroTech

ssalabs.com sem-analytical.com envirotechonline.com

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Phone (775) 857-2400 Fax: (888) 398-7002 (EPA#: NV00015, CA2526)

CHAIN-OF-CUSTODY-RECORD

Page 1 of 2

Report Results To:
Report Attention: Nicole Peacock
Project Number:
Company: Dudek
Mailing Address: 605 Third St
City, State, Zip: Encinitas, CA 92024
Phone: 760 479 4152
Email / Fax: npeacock@dudek.com

Send Invoice To:
Invoice Attention: Nicole Peacock
PO#
Quote #
Company:
Mailing Address:
City, State, Zip: Same
Phone:
Email / Fax:

COMPLIANCE MONITORING? Yes ☐ No ☐
NEW ADDRESS? Results: ☐ Invoice: ☐

Applicable Program: SDWA ☐ CWA ☐ RCRA ☐ Mining ☐ Other ____

QC Level Report: I II III IV
NOTE: Surcharges apply to Level II, III and IV reports

Send Results Via: Mail: ☐ Email: ☐ Fax: ☐

Send Invoice Via: Mail: ☐ Email: ☐ Fax: ☐

Field Measurements
On-Site pH: Chlorine:
Temperature: Other:

Sampled by: Susan Smith Signature: [signature]

I attest to the validity and authenticity of the sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time is considered fraud and may be grounds for legal action.

Standard: ☐ Standard TAT 7-10 Business Days. Note that some tests vary.
Rush
☐ Same Day: ☐ 3 Day: ☐ Other (specify): ____
☐ 1 Day: ☐ 4 Day:
☐ 2 Day: ☒ 5 Day:
Rush results will be issued after 4:00 p.m.
NOTE: A Rush Surcharge is applied for rush samples

Other Pertinent Information / Special Instructions

ANALYSES REQUESTED

440-180371 Chain of Custody

Date Sampled	Time Sampled	Sample Identification	SSAL - SEM Lab No.	Comp. Grab	Matrix*	Preservative**	Number / Type of Containers ***	Title 22 Metals	SPLP Metals	Total cyanide	pH	Hold	Comments
3/22/17	1513	DFSEP6-1			SS	6	1	X	X	X	X		Acetate liner
	1514	DFSEP6-3			SS	6	1	X	X	X	X		
	1515	DFSEP6-5			SS	6	1					X	
	1545	DFSEP7-1			SS	6	1	X	X	X	X		
	1546	DFSEP7-3			SS	6	1	X	X	X	X		
	1547	DFSEP7-5			SS	6	1					X	
	1605	DFSEP8-1			SS	6	1	X	X	X	X		
3/22/17	1606	DFSEP8-3			SS	6	1	X	X	X	X		Acetate liner

	Signature	Print Name	Company	Date	Time
Relinquished By:	[signature]	Dudek	Susan Smith	3/22/17	500 pm
Received By:	Fed Ex				
Relinquished By:					
Received By:					
Relinquished By:					
Received By:	Olga Ornelas	Olga Ornelas	TAI	3/23/17	9:45
Authorized By:					

Authorization is required to process samples. This obligates your organization for service fees. SSAL Standard T & C's or other written agreement applies. If collections or legal services are required to recover said fees, your organization will be responsible for all fees and costs in addition to service fees.

Samples are discarded 30 days after results are reported unless other arrangements are made and storage fees may apply. The analytical results associated with this COC apply only to these samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.

Matrix* DW-Drinking Water, WW-Waste Water, GW-Ground Water, SW-Surface Water, SS-Soil, S-Solid, OT-Other
Preservative** 1=H_2SO_4, 2=HNO_3, 3=HCl, 4=NaOH, 5=$Na_2S_2O_3$, 6=None, 7=Other

4.1°c/3.8°c IR-77

Container*** P-Plastic, G-Glass, V-Voa Vial, OT-Other

T#: 7859 9884 9222

Test America

SilverState Analytical Laboratories — Sierra Environmental Monitoring — EnviroTech

ssalabs.com sem-analytical.com envirotechonline.com

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■ 1135 FINANCIAL BOULEVARD, RENO, NV 89502
Phone (775) 857-2400 Fax: (888) 398-7002 (EPA#: NV00015, CA2526)

CHAIN-OF-CUSTODY-RECORD

Report Results To:
Report Attention: Nicole Peacock
Project Number:
Company: Dudek
Mailing Address: 605 Third St
City, State, Zip: Encinitas CA 92024
Phone:
Email / Fax: npeacock@dudek.com

Send Invoice To:
Invoice Attention: Nicole Peacock
PO#
Quote #
Company:
Mailing Address: Same
City, State, Zip:
Phone:
Email / Fax:

COMPLIANCE MONITORING? Yes ☐ No ☐
NEW ADDRESS? Results: ☐ Invoice: ☐

Applicable Program
SDWA ☐ CWA ☐ RCRA ☐ Mining ☐ Other ____

QC Level Report
I II III IV
NOTE: Surcharges apply to Level II, III and IV reports

Sampled by:
Signature:

I attest to the validity and authenticity of the sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time is considered fraud and may be grounds for legal action.

Standard: ☐ Standard TAT 7-10 Business Days. Note that some tests vary

Rush
☐ Same Day: ☐ 3 Day: ☐ Other (specify): ____
☐ 1 Day: ☐ 4 Day:
☐ 2 Day: ☐ 5 Day:
Rush results will be issued after 4:00 p.m.

NOTE: A Rush Surcharge is applied for rush samples

Other Pertinent Information / Special Instructions

ANALYSES REQUESTED

Date Sampled	Time Sampled	Sample Identification	SSAL - SEM Lab No.	Comp. Grab	Matrix*	Preservative**	Number / Type of Containers***	Hold
3/24/17	1607	DFSEP8-5			SS	6	1	X

Send Results Via:
Mail: ☐ Email: ☐ Fax: ☐

Send Invoice Via:
Mail: ☐ Email: ☐ Fax: ☐

Field Measurements
On-Site pH: Chlorine:
Temperature: Other:
Metals: Acetate liner

COMMENTS:

	Signature	Print Name	Company	Date	Time
Relinquished By:	Susan Smith		Dudek	3/22/17	500 pm
Received By:	FedEx				
Relinquished By:					
Received By:					
Relinquished By:					
Received By:	Olga Ornelas	Olga Ornelas	TAZ	3/23/17	9:45
Authorized By:					

Authorization is required to process samples. This obligates your organization for service fees. SSAL Standard T & C's or other written agreement applies. If collections or legal services are required to recover said fees, your organization will be responsible for all fees and costs in addition to service fees.

Samples are discarded 30 days after results are reported unless other arrangements are made and storage fees may apply. The analytical results associated with this COC apply only to these samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.

Matrix* DW-Drinking Water, WW-Waste Water, GW-Ground Water, SW-Surface Water, SS-Soil, S-Solid, OT-Other
Preservative** 1=H_2SO_4, 2=HNO_3, 3=HCl, 4=NaOH, 5=$Na_2S_2O_3$, 6=None, 7=Other
Container*** P-Plastic, G-Glass, V-Voa Vial, OT-Other

Login Sample Receipt Checklist

Client: Dudek & Associates

Job Number: 440-180371-2

Login Number: 180371
List Number: 1
Creator: Garcia, Veronica G

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT D4

Cultural Resources Report

CULTURAL RESOURCES INVENTORY REPORT
for the
DODGE FLAT SOLAR ENERGY CENTER, WASHOE COUNTY, NEVADA

Prepared for:

Dodge Flat Solar, LLC
700 Universe Boulevard
Juno Beach, Florida 33408

Prepared by:

Adam Giacinto, MA, RPA
and
Micah Hale, PhD, RPA

DUDEK

JUNE 2017

NATIONAL ARCHAEOLOGICAL DATABASE (NADB) INFORMATION

Authors:	Adam Giacinto, MA, RPA and Micah Hale, PhD, RPA
Firm:	Dudek
Project Proponent:	Dodge Flat Solar, LLC
Report Date:	June 2017
Report Title:	Cultural Resources Inventory Report for the Dodge Flat Solar Energy Center, Washoe County, Nevada
Type of Study:	Archaeological Inventory and Sensitivity Analysis
Resources:	DF-SB-S-01, DF-SB-S-02, DF-SB-S-03, DF-SB-S-04, and DF-SB-I-01; 26-WA2006, 26-WA6471, 26-WA7051, 26-WA7052, 26-WA7061, 26-WA7062, 26-WA7063, and 26-WA7293.
USGS Quads:	Wadsworth U.S. Geological Survey (USGS) 7.5-minute quadrangle; Sections 23 and 25 of Township 21 North, Range 23 East; and Section 31 of Township 21 North, Range 24 East.
Acreage:	1,632 acres
Permit Numbers:	BLM NV Cultural Use Permit: N-93448 8151 (NV-930)
Keywords:	Wadsworth USGS 7.5-Minute Quadrangle; Sample Pedestrian Survey; Predictive Sensitivity Analysis; Placer Mining; Gypsum; Piute

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MANAGEMENT SUMMARY

The proposed Dodge Flat Solar Energy Center (project) is located on approximately 1,632 acres, and is 3.5 miles northwest of the town of Wadsworth in an unincorporated portion of Washoe County, Nevada. This area falls on the Wadsworth U.S. Geological Survey (USGS) 7.5-minute quadrangle; in Sections 23 and 25 of Township 21 North, Range 23 East; and in Section 31 and 25 of Township 21 North, Range 24 East.

For the purposes of this cultural resources inventory, the Area of Potential Effect (APE) consists of the project site. The project site is defined herein as including parcel boundaries, corridor boundaries, and other project limits. Dudek's cultural resources survey of the project APE indicates that there is a low potential for the project as currently designed to result in the inadvertent impact to significant archaeological or historic-era resources or deposits. A records search with one-mile buffer was completed using the online NVCRIS database (3/10/2017), and previously completed archaeological reports and site records were reviewed. Additional resources consulted included historical imagery, mining records, geologic maps, and academic publications. Seven sites have been previously identified within the project APE, all of which were previously determined not eligible for NRHP listing. Recorded resource types included historic-era roads, refuse scatters, mining features, as well as prehistoric lithic artifact scatters.

Prior to archaeological fieldwork, areas of increased relative sensitivity were determined through review of high-resolution drone aerial imagery, and weighted modeling using slope, aspect, landform, drainages, and information relating to previously recorded sites. An increased potential for encountering historic-age mining and refuse deposit sites within the northwest project area was predicted through proximity to geologic formations suitable to contain gold and mineral deposits, as guided by review of historical records. Areas along the western edges of the project, nearest the recorded shorelines of Latest Pleistocene-era pluvial Lake Lahontan, were considered to have the greatest potential to contain prehistoric material observable on the surface. Pedestrian survey sampling was then completed by three archaeologists over the course of four field days to confirm this modeling. A total of five newly recorded cultural resources were recorded within the project area during survey. These included three mining sites/complexes, one historic-age refuse deposit, and an isolated prehistoric stemmed projectile point. The majority of the project area was observed to have been severely disturbed by past mining activities during this survey. The proposed project site was revised to include an additional 53 acre area (within Section 19) subsequent to archaeological fieldwork. However, based on review of predictive factors and drone aerial imagery, the attributes of the added area are consistent with other portions of the APE and additional pedestrian survey was determined by project staff to be unnecessary due to its low potential to modify the findings of the present study.

Review of Dudek's survey results against NVCRIS records and previous technical studies suggested that a representative range of resource types has been documented. The adequacy of the predictive modeling was largely supported through these efforts, allowing for management recommendations to be made based on this sampling information.

In the event that the newly identified resources cannot be feasibly avoided by the project, additional work is recommended. All features and cultural constitutes at sites DF-SB-S-01, DF-SB-S-02, DF-SB-S-03, and DF-SB-S-04 have not yet been fully documented. However, based on field information to date, it is clear that these resources will not be eligible for NRHP listing through additional research, description and reporting. The prehistoric isolate (DF-SB-I-01), is not significant in itself due to lack of data potential (Criterion D), however it could be collected prior to fieldwork and donated to the University of Nevada, Reno or another curatorial institution. Based on the information gathered to date from records search information, archival research, predictive modeling, and sampling by pedestrian survey, the project as currently designed will not impact any significant cultural resources. In the event that additional cultural resources are identified during construction, disturbance to these resources should be avoided and a qualified archaeologist retained to evaluate the find. If human remains are encountered, earth-disturbing work should be halted in the area, including a reasonable buffer to ensure protection, and the Nevada Office of Historic Preservation must be contacted to record the find and facilitate proper treatment with the Pyramid Lake Paiute Tribe (PLPT).

1 INTRODUCTION

1.1 Project Location

The proposed Dodge Flat Solar Energy Center (project) is located on approximately 1,632 acres, about 3.5 miles northwest of the town of Wadsworth in an unincorporated part of Washoe County, Nevada (Figure 1). The project area is located within the Great Basin region, east of the Sierra Nevada Mountains. The Pah Pah Range, a northwest-southeast mountain range, is located immediately west and the project area is located at the mouth of Olinghouse Canyon, Frank Free Canyon, and Tiger Canyon. More specifically, the project is located north of Olinghouse Road and approximately 1.5 miles west of State Route 447.

The proposed project is located on privately owned land within the jurisdiction of the Washoe County. Assessor's Parcel Numbers associated with the private lands are the following: 079-150-29, 079-150-57, and 079-180-16. The parcels are designated General Rural (GR) in the Truckee Canyon Area Plan. This area falls on the Wadsworth U.S. Geological Survey (USGS) 7.5-minute quadrangle; in Sections 23 and 25 of Township 21 North, Range 23 East; and in Section 31 and 25 of Township 21 North, Range 24 East (Figure 2).

1.2 Project Description

Dodge Flat Solar LLC, a subsidiary of NextEra Energy Resources, is considering the development of the Dodge Flat Solar Energy Center (Proposed Project) which would include a 200 MW solar photovoltaic facility, a battery storage component, and associated infrastructure on approximately 1,632 acres of private land.

1.2 Regulatory Context

The project falls within an unincorporated portion of Washoe County, Nevada, for which agency oversight is provided by the East Truckee Canyon Citizen Advisory Board and Washoe County Commission District No. 4. The primary regulatory conditions relating to cultural resources in this area are outlined by the Washoe County Master Plan (WCMP) and the Truckee Canyon Area Plan (TCAP). However, the Nevada Office of Historic Preservation (NOHP) also has regulatory oversight in specific matters pertaining to the protection and proper treatment of cultural resources and human remains. Because the project is located contiguous to public lands managed by the Bureau of Land Management (BLM) and the Pyramid Lake Indian Reservation managed by the Pyramid lake Tribal Council, provided management recommendations are also consistent with Section 106 of the NHPA.

1.2.1 National Historic Preservation Act (NHPA)

The National Register of Historic Places (NRHP) is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service (NPS), under the U.S. Department of the Interior, the NRHP was authorized under the NHPA, as amended. Its listings encompass all National Historic Landmarks, as well as historic areas administered by NPS.

NRHP guidelines for the evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, *How to Apply the National Register Criteria*, as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 2009). NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

SOURCE: ESRI Basemaps

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FIGURE 1
Regional Map

Dodge Flat Solar Energy Project

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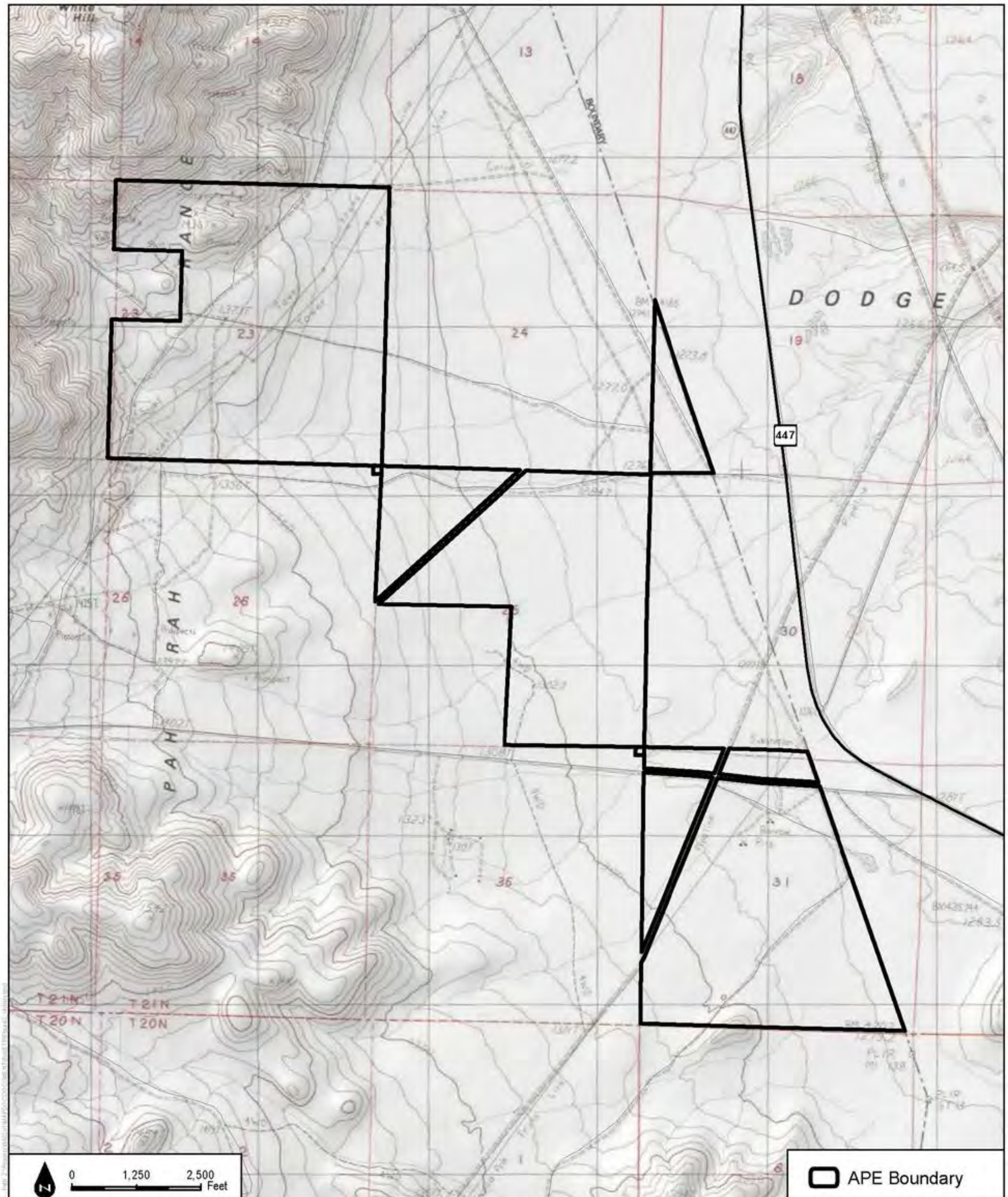

SOURCE: ESRI Basemaps; Storey County GIS

DUDEK

FIGURE 2
Vicinity Map

Dodge Flat Solar Energy Project

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A historic property is defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the NRHP criteria" (36 CFR Sections 800.16(i)(1))

Effects on historic properties under Section 106 of the NHPA are defined in the assessment of adverse effects in 36 CFR Sections 800.5(a)(1):

> An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

Adverse effects on historic properties are clearly defined and include, but are not limited to:

(i) Physical destruction of or damage to all or part of the property;

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;

(iii) Removal of the property from its historic location;

(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;

(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance (36 CFR 800.5 (2)).

The criteria of adverse effect are applied to historic properties, if any exist in the Project APE. If no historic properties are identified in the APE, a finding of "no historic properties affected" will be made for the proposed Project. If there are historic properties in the APE, application of the criteria of adverse effect will result in Project-related findings of either "no adverse effect" or of "adverse effect," as described above. A finding of no adverse effect may be appropriate when the undertaking's effects do not meet the thresholds in criteria of adverse effect 36 CFR Sections 800.5(a)(1), in certain cases when the undertaking is modified to avoid or lessen effects, or if conditions were imposed to ensure review of rehabilitation plans for conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (codified in 36 CFR Part 68).

If adverse effects findings were expected to result from the proposed Project, mitigation would be proposed, as feasible, and resolution of those adverse effects by consultation may occur to avoid, minimize, or mitigate adverse effects on historic.

1.2.2 County and Regional Guidance

The following sections have been summarized or cited directly from the WCMP and TCAP (Washoe County 2012). No specific policies or action programs are outlined for identification or management of impacts to cultural resources. However, the Conservation element of the TCAP does specifically make reference to the importance of considering archaeological and historic sites of significance. Finally, the Nevada Office of Historic Preservation has specific duties regarding the treatment of Native American human remains.

Washoe County Master Plan (WCMP) and Truckee Canyon Area Plan (TCAP)

The WCMP serves as the master plan for Washoe County and is organized into three volumes. Volume 1 includes seven county-wide elements, Volume 2 includes area plans (the project is located within the TCAP), and Volume 3 includes a number of more detailed plans (e.g. specific plans, community plans, joint plan). The WCMP is used to determine the most desirable location of each type of development and contains policies and maps designated to define development suitability and conserve natural resources (e.g. protect critical environmental areas, define water resources, enhance visual and scenic corridors, etc.). It also includes growth forecasts as well as policies and maps reflecting desires related to land uses and transportation (Washoe County 2012).

The TCAP serves as a localized guide for the Board of County Commissioners, the Washoe County Planning Commission, and the community on matters of within the Truckee Canyon planning area within the WCAP planning area. The plan outlines the existing pattern of development and provides a guide for growth. The TCAP guides growth by recognizing critical conservation areas, establishing existing and future land use and transportation patterns, and identifying current and future public services and facilities needs (Washoe County 2012).

The TCAP Conservation Element identifies types of resources and the different constraints on land use found in the Truckee Canyon planning area. The Truckee Canyon planning area contains several cultural resources, defined here as prehistoric archaeological, architectural and historical resources. Equally important are the scenic resources available in the area, including the Truckee River, surrounding canyons and mountain ranges. These resources contribute to an aesthetically pleasing area that provides educational and scientific opportunities, make the area an attractive one in which to work and live, and contribute to the region's rural character. The goal of this section is to point out the need to protect and properly utilize these resources.

Archaeological Resources

Prehistoric artifacts, rock art, seasonal camps and residential sites give evidence of long-term human occupation of the Truckee Canyon planning area. Past cultures of the area include the Northern Paiute Indians. The Northern Paiutes utilized a variety of habitats including desert, aquatic, grassland and pinyon communities. They were hunters and gatherers, supplementing seasonal food resources (seeds and nuts) with more predictable aquatic resources. These food resources allowed for more stable settlement patterns--large bands for part of the year and independent groups for the remainder of the year. The prehistoric artifacts indicate that both flora and fauna were used as food sources by the Northern Paiutes and possibly the Washoe (Washoe County 2012).

Architecturally Significant and Historic Places

Activity in the planning area, related to European settlement, first occurred with emigrant wagon trains passing through during the 1840s. The California Emigrant Trail (Truckee Branch) crossing northern Nevada utilized the Truckee River Canyon as a way to California. Architecturally significant and historic sites within the Truckee Canyon planning area include building foundations, pioneer trails, structures, and various artifacts related to early settlement of the Victorian frontier and the mining, ranching and timber industries (Washoe County 20012).

In the future, if additional sites are found to have historic significance, appropriate surveys should be conducted. Developments in or near these sites should mitigate impacts on the historic value of the sites.

Nevada Office Of Historic Preservation: Treatment Of Indian Burial Site

A person who disturbs the cairn or grave of a native Indian through inadvertence while engaged in a lawful activity such as construction, mining, logging or farming or any other person who discovers the cairn or grave of a native Indian that has not been previously reported to the Office shall immediately report the discovery and the location of the Indian burial site to the Office. The Office shall immediately consult with the Nevada Indian Commission and notify the appropriate Indian tribe. The Indian tribe may, with the permission of the landowner, inspect the site and recommend an appropriate means for the treatment and disposition of the site and all artifacts and human remains associated with the site.

If the Indian burial site is located on private land and: (a) The Indian tribe fails to make a recommendation within 48 hours after it receives notification pursuant to subsection 1; or (b) The landowner rejects the recommendation and mediation conducted pursuant to NRS 383.160 fails to provide measures acceptable to the landowner, the landowner shall, at his or her own expense, reinter with appropriate dignity all artifacts and human remains associated with the site in a location not subject to further disturbance.

If the Indian burial site is located on public land and action is necessary to protect the burial site from immediate destruction, the Office may cause a professional archeologist to excavate the site and remove all artifacts and human remains associated with the site for subsequent reinternment, following scientific study, under the supervision of the Indian tribe.

Any other excavation of an Indian burial site may be conducted only: (a) By a professional archeologist; (b) After written notification to the Administrator; and (c) With the prior written consent of the appropriate Indian tribe. Failure of a tribe to respond to a request for permission within 60 days after its mailing by certified mail, return receipt requested, shall be deemed consent to the excavation.

All artifacts and human remains removed during such an excavation must, following scientific study, be reinterred under the supervision of the Indian tribe, except that the Indian tribe may, by explicit written consent, authorize the public display of a particular artifact. The archeologist, Indian tribe and landowner shall negotiate an agreement to determine who will pay the expenses related to the interment.

2 PROJECT CONTEXT

2.1 Environmental Context

The project area is located within the Great Basin region, east of the Sierra Nevada Mountains. The Pah Pah Range, a northwest-southeast mountain range, is located immediately west and the project area is located at the mouth of Olinghouse Canyon, Frank Free Canyon, and Tiger Canyon. Spanish Springs Peak, approximately 7,404 feet above mean sea level (amsl), is the tallest mountain peak within the vicinity and is approximately 13 miles to the west. Topography at the project site is generally flat with some topographic relief, gently sloping in a northwest direction. Site elevations vary from 4,479 feet amsl at the western portion to 4,176 feet amsl in the eastern portion of the study area.

The majority of the study area lies within the Pyramid-Winnemucca Lakes Watershed, a 1,370-square-mile watershed, specifically within the Dodge Flat Subunit. The southeast corner of the study area lies within the Truckee Watershed, a 1,190-square-mile watershed, specifically within the Derby Dam-Truckee River Subunit. In general, the project site falls within the Lahontan Basin floralistic zone dominated by shadescale vegetation. The major grass species found on this area are Indian ricegrass (*Achnatherum hymenoides*), Thurber's needlegrass (*Achnatherum thurberianum*), desert needlegrass (*Achnatherum speciosum*), bottlebrush squirreltail (*Elymus elymoides*), Basin wildrye (*Leymus cinereus*), and Sandberg bluegrass (*Poa secunda*). Shrub species include Olinghouse Allotment are big sagebrush (*Artemisia tridentata*), low sagebrush (*Artemisia arbuscula*), Wyoming big sagebrush (*Artemisia tridentata* var. *wyomingensis*), Bailey greasewood (*Sarcobatus vermiculatus* var. *baileyi*), shadscale saltbush (*Atriplex confertifolia*), bud sagebrush (*Artemisia spinescens*), green rabbitbrush (*Chrysothamnus viscidiflorus*), antelope bitterbrush (*Purshia tridentata*), littleleaf horsebrush (*Tetradymia glabrata*), and green ephreda (*Ephedra viridis*) . Tree species found on the allotment are Utah juniper (*Juniperus osteosperma*) and singleleaf pinyon pine (*Pinus monophylla*). Invasive plants common to this area are Russian thistle (*Salsola kali*) and cheatgrass (*Bromus tectorum*; BLM 2008).

This project is regionally located within the Truckee River Basin, a closed topographic basin that includes the Lake Tahoe watershed and headwater tributaries along the eastern slopes of the Sierra Nevada. All water that enters the region either infiltrates into the groundwater basin or sink areas that may include wetlands, lakes and playas. The closest perennial feature to the study area is the Truckee River, located between 1.7 and 3.4 miles to the east of the project site. It runs from Lake Tahoe approximately 120 miles to its terminus in Pyramid Lake.

The project area is located on an alluvial fan at the southern terminus of Fossil Canyon. The main stem channel coming from Fossil Canyon splits into two channels at the mouth of the canyon, approximately 250 feet north of the northern study area boundary. The eastern channel, Fossil Canyon Wash, continues southeast to Palm Canyon Wash and is outside the study area boundary. A hill located along the northeastern project site boundary separates Fossil Canyon Wash from the study area. The western main stem channel continues south along the western study area boundary and terminates at the existing historic quarry and ore processing area. At the northern boundary of the study area, a diversion berm exists that directs flows away from the reclaimed quarry to the southeast. Some of these berms have failed and flow from these failed areas enter and terminate within the bermed quarry. Distributary channels occur throughout the study area and flow south from Fossil Canyon Wash, continue south across the study area in a southerly direction, and terminate in the existing quarry. Five ephemeral compound channels flow through the study area generally from the southwest to the northeast, through culverts under Highway 447, and continue east to the Truckee River as it flows north to Pyramid Lake.

The north and central portions of the study area has been historically disturbed by mining operations and is currently largely unvegetated or contains a low cover of non-native plant species. The mining activity included extensive modifications of the landscape. The activities included the construction of roads, ditches, channels, pits and berms to reroute water around the mine site or isolate it in bermed areas. Some of the modifications still exist in original condition at the what appears to be a “reclaimed” portion of the mining area (presumably a quarry and ore processing area) and some have been left in place and/or failed over time, resulting in a large portion of the north-central section of the study area draining into, and terminating at the bermed reclaimed mining area (bermed pits). These retaining basins are listed on USGS maps as “borrow pits”, though there is also a mining prospect noted at this location. The remaining study area is vacant and mostly undisturbed with a land cover of native vegetation.

2.2 Geomorphology

Geologic landforms considered suitable to support the presence of archaeological deposits are relatively limited within the project area, but present. In general, the project area is dominated by mid- to late Holocene age alluvial deposits formed from flows of gravels and sediments from upslope surrounding areas. Portions of the project area intersect recessional shoreline geologic deposits formed during the last major lacustral cycle of Lake Lahontan (approximately 11,000 years old). This lake was generally present between 11,000-35,000 years ago, and was supported by cool conditions with increased precipitation and reduced evaporation that persisted during this period. The formation is referred to as the Sehoo Alloformation, which as present in the central project area (Section 25), is primarily comprised of near- and onshore gravely beach deposits and course sand formed from underlying bedrock and alluvial fans (Qsmb; Bell, Garside, and House 2005). Radiocarbon samples indicate the deposits to be 11,000 – 12,500 years old in the project area. Lake Lahontan reached a maximum depth of over 500 feet and covered more than

8,610 square miles. The surrounding slopes are marked by terracing formed through wave action of the recessional shorelines. Four primarily rivers fed the lake, including Walker, Carson, Truckee, and Humboldt.

The remaining portions of the project area are dominated by mid- to late Holocene-age alluvial deposits. Young alluvial-fan deposits (Qfy2) dating to approximately 7,000 years old are present throughout much of the southeast, central and northwest project areas. Undifferentiated young alluvial fan deposits (Qfy) and young alluvial fan deposits dating to the mid- to late Holocene are also present in the southeast project area, however this area is dominated by alluvial fan (Qfw) deposits associated with the Wyemah interlacustral interval dating more than 150,000 years ago. One small ephemeral playa deposit, characterized by the presence of exposed silt and mud in small depressions, is present in the southeast portion of the project area.

Moderately welded rhyolitic ash-flow tuff formations (Tws - Tuffs of Whisky Spring) are present as the raised hills in the northwest project area. A high concentration of placer gold mining sites are present in these formation.

Soil mapping of the area is available from the USDA Natural Resources Conservation Service (NRCS; USDA NRCS 2016). The following soil types have been documented on site: Bango loamy sand, 0 to 2% slopes; Bango silt loam, 0 to 2% slopes; Juva silt loam, 2 to 4% slopes; Patna sand, 0 to 2% slopes; playas; and Trocken-biddleman-bluewing associated. During the pedestrian survey, soils were observed to have a loamy to sandy base with desert pavement or cryptogamic crusts of metavolcanic rocks ranging from pea sized to fist sized and a few scattered 3-foot diameter boulders.

Based on review of geologic and soils information, the project area does have some potential to support the presence of cultural deposits within mid Holocene-age deposits (Pendleton et al. 1982). These formations allow for the development of soils and capping of cultural deposits or features that may have been created during this period of early occupation by prehistoric inhabitants. However, the Pleistocene was followed by a period of increased heat and aridity (7,000 to 4,500 years ago), during which the shoreline of Lake Lahontan receded toward what is now Pyramid lake. The duration of this period of recession is unclear, though it likely varied by minor climate fluctuations and was affected by topographic conditions. In the absence of this stable shoreline, it is unclear if the actual project area would have remained intensively used or if such use would have been reflected in a geographically distributed pattern more difficult to observe. Depositional characteristics of geologic formations intersecting (or just outside of) the lake highstand, including gravelly beach deposits (Qsmb) and alluvial fan deposits (Qfw), are more deflated and less likely to support cultural deposits. This shoreline of Lake Lahontan has been documented to be above 1,200 meters in elevation along its northern shore (Camp 2009);

however, geologic evidence suggests that it followed a contour between 1,320 and 1,330 meters in the vicinity of the project. While these deposits are less likely to provide soil development suited to preserve temporal information, they are more likely to contain raw lithic materials suited for prehistoric tool production. In addition, the deflated nature of these deposits allows for cultural material to be more readily identifiable during pedestrian survey. Depending on conditions (i.e., slope, prehistoric wave action, geology), such areas are more likely to contain Paleoindian/Early Archaic transitional sites.

Historic placer mining, primarily for gold, has occurred throughout the Olinghouse (White Horse) mining district, located immediately to the west and north of the project area. A number of historic-age adits and pit mining locations have been documented along the low hills in the west and northwest of the project area, termed “Tuffs of Whiskey Spring (Tws). These formation areas mark this transition from alluvial deposits to rhyolitic deposits with veins of ore and minerals. These areas have an increased potential to be associated with historic-period sites.

2.3 Cultural Context

2.3.1 Prehistoric Context

The earliest occupation of the region likely occurred approximately 11,000 years before present (BP), during the final climatic fluctuations that supported pluvial conditions during the Pleistocene. These conditions allowed for a number of pluvial lakes to persist throughout the Great Basin, including the project adjacent Lake Lahontan (Pendleton et al. 1982; Camp 2009). A number of cultural sequences have been developed for this region. Some of these are based on geologic time, most are interpreted through temporal trends derived from archaeological assemblages, and others are interpretive reconstructions. Each of these chronologies describes essentially similar trends in assemblage composition in more or less detail. The prehistory of the western Great Basin is generally divided into four regional phases, Pre-Archaic/Paleoindian, Early Archaic, Middle Archaic, and Late Archaic (Table 1).

Table 1. Summary of Cultural Periods

<table>
<tr><th>Cal Years BP*</th><th>Epoch</th><th>Cultural Phase</th></tr>
<tr><td>< 150</td><td>Historic-era</td><td>Historic-era</td></tr>
<tr><td>150 - 2,000</td><td rowspan="2">Late Holocene</td><td>Late Archaic
Kings Beach</td></tr>
<tr><td rowspan="2">2,000 - 4,000</td><td rowspan="2">Middle Archaic
Martis</td></tr>
<tr><td rowspan="2">Middle Holocene</td></tr>
<tr><td rowspan="2">4,000 - 7000</td><td rowspan="2">Early Archaic
Spooner</td></tr>
<tr><td rowspan="2">Early Holocene</td></tr>
<tr><td>7,000 - 10,000</td><td>Paleoindian
Tahoe Reach</td></tr>
<tr><td>11,000 ></td><td>Latest Pleistocene</td><td>Paleoindian
Washoe Lake Phase</td></tr>
</table>

* Dates for the initiation of Early and Late Archaic Period are variable between chronologies, generally subject to a variation of +/- 500 years BP depending on interpretation.

Paleoindian Period

The Paleoindian period is generally associated with surface sites that are likely to contain some or all of the following assemblage: bifacial knives, stemmed and concave base projectile points with edge grinding, crescents, gravers, high proportions of formal lithic tools (such as punches, scrapers, and choppers), and relatively small proportions of groundstone tools (Elston 1986; Camp 2009). Tools and projectile points reflected bifacial lithic reduction strategies. Fluted points associated with this period have been identified in the surrounding Great Basin and westward to Sierra Valley (west of Reno, Nevada; Foster and Betts 1995), Ebbett's Pass (south of Lake Tahoe; Dillon 2002), and at the Sailor Flat site (in the Tahoe National Forest; Wohlgemuth 1984). Fluted points have generally been recorded as isolated finds, or recovered from contexts of mixed provenience. The primary examples of the Paleoindian pattern, to which such fluted and stemmed points are generally assigned, have been recorded east of the Sierra Nevada. Some of the most pertinent of such sites were studied by Emma Lou Davis (1978) on China Lake Naval Air Weapons Station, near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multicomponent fluted point site, and MNO-680—a single component Great Basined Stemmed point site (Basgall et al. 2002). At MNO-679 and MNO-680, groundstone tools were rare while finely made projectile points were common. A number of researchers have noted variation in assemblages dating to this period among different the different ecozones surrounding these pluvial lakes (Davis 1982; Pendleton et al. 1982; Weide 1982; Elston 1986; Camp 2009). In general for the current project, it is considered most likely for stemmed points to be concentrated near shorelines of Lake Lahontan relative to other surrounding areas.

Early Archaic (7000 BP–4000 BP)

The Early Archaic (also referred to as the Spooner Complex) began with a general increase in temperature and aridity during the Holocene related to the Altithermal. This resulted in a recession of pluvial lake and marshy areas, and a general expansion of shrubby and drought-resistant vegetation communities expanded. Increased temperatures and reduced water availability resulted in tribal communities migrating to upland areas (largely from the western Great Basin) to take advantage of more abundant usable plants, game, and fish. This period is generally characterized by Humboldt Concave-based, Pinto, and Gypsum projectile points (Elston 1971); however, limited available data is present in the archaeological record relating to defined tool and point types. The tool assemblage reflects a more generalized and multi-function use with reduced formality and a reduction in size. Seed grinding implements also appear more commonly. Archaeological sites associated with this period are more commonly found along valley floors, with caves and rockshelters also used for the storage of goods (Elston 1986). Early Archaic period sites include Kramer Cave and Hidden Cave. It should be noted that by some chronologies this period extends to 8,000 BP, generally reflecting the gradual nature of climatic change during this period and inferred changes in culturally adaptive strategies. The Spooner Complex has been thoroughly discussed by archaeologists, notably Elston (1971) and Elston, Davis, and Townsend (1977).

Middle Archaic (4000 BP–2000 BP)

The Middle Archaic has been assigned different chronological periods by researchers. By approximately 2500 years BP the climate had clearly begun to improve, generally transitioning to a pattern of winter precipitation. This period is generally inclusive of the Martis Complex, though obsidian hydration and radiocarbon dates have been provided at least as broadly as 5000 BP -1,500 BP for this assemblage (Elsasser and Gortner 1991). Subsistence during this period was based on hunting and seed collecting economy. The level of sedentism has been debated, with some researchers suggesting semi-sedentary habitations near marshy environments and others contending a strategy of relative mobility based on the seasonal abundance of resources (Heizer, Elsasser 1953). Projectile points were variable during this period, and were commonly heavy with low formality during the early portion of the Middle Archaic. Temporally representative tools include finger-held drills or punches, retouched volcanic flake scrapers, spokeshave-notched tools, and large biface blades and cores (Hull 2007). Martis Complex-style Middle Archaic sites have been documented at Cave Rock near Lake Tahoe, Spanish Springs Valley, in the Pine Nut Mountains, Dangberg Hot Springs, and Steamboat Springs (Pendleton et al. 1982;Weide 1982). Projectile point types generally included Elko and Martis series components throughout Washoe County. During this period there was a more intensive exploitation of local materials and environments, notably of basaltic materials. Pyramid Lake water levels rose during this period. Locally, the Middle Archaic period also demonstrated a marked increase in diversity of textiles and other perishables cultural items, changes in the size and complexity of house structures, and evidence of trans-Sierran trade (particularly shell beads and obsidian) and perhaps also by craft specialization toward the end of this period (Pendleton et al. 1982; Camp 2009)). Sites along the Truckee River are noted to include house pits with a central hearths, interior cache pits, and (in some cases) burials with grave goods beneath the floors. It has been suggested that prehistoric people near Pyramid Lake during this time primarily exploited fish, small game, and non-aquatic plant foods (Pendleton et al. 1982).

Late Archaic (2000 BP–Historic Contact)

The Late Archaic is generally considered to include the King Beach Complex, though mostly in reference to patterns observed in the northern Sierra front. A great deal of overlap between the Martis Complex and later Kings Beach Complex (1,300 BP to 500 BP) has been documented. In general, this period was characterized by populations that shifted between multiple locations based on the seasonal availability of resources. Subsistence strategy during this period shifted locally further toward fishing and gathering. A reduction in size and weight of projectile points corresponded with adoption of bow and arrow technology. Typical point forms within this region included Desert Side-notched, Cottonwood, Eastgate series and Rosegate series (Pendleton et al. 1982). Obsidian and chert was added in greater quantities, partially replacing volcanic materials such as basalt as the preferred materials for the manufacture of lithic tools. Brownware pottery was introduced (Elston 1986).

2.3.2 Ethnohistoric Period (post-150 BP)

The project area was ethnographically occupied by Northern Piute speaking peoples. This linguistic group is classified as a dialect of the Western Numic language sub-group, which is rooted in the Northern Uto-Aztecan language family (Golla 2011: 169). Victor Golla has contended that one can interpret the amount of variability within specific language groups as being associated with the relative “time depth” of the speaking populations (Golla 2007: 80). A large amount of variation within the language of a group represents a greater time depth than a group’s language with less internal diversity. Uto-Aztecan is the most geographically extensive linguistic family documented in the Americas to be spoken among Native American populations, and is generally assigned a time depth of 5,000 years (Golla 2007: 80). The greatest internal variation within this family is demonstrated between Great Basin, Pueblo Southwest, and Southern Uto-Aztecan (extending to Central America) Uto-Aztecan languages. The division between these groups is approximated to have occurred approximately 3,500 years ago. The variation within the Western Numic dialects (including Mono and Northern Piute) is relatively shallow, indicating a divergence in the last 2,000 years (Golla 2011:170).

A large portion of the following section has been cited directly from a publically available ethnohistoric overview study prepared for the BLM (Bengston 2003).

Prior to Euroamerican contact, the Northern Paiutes occupied a very large territory that included parts of what are now California, Oregon, and Nevada. Fowler and Liljeblad (1986:435) described Northern Paiute aboriginal boundaries as follows:

> On the west, for some 600 miles, the perimeter followed the western edge and occasionally the crest of the Sierra Nevada and the watershed separating the Pit and Klamath rivers from the interior draining northern sector of the Great Basin. On the north, for roughly 300 miles, it continued through an undetermined territory beyond the summits dividing the drainage systems of the Columbia and Snake rivers (Park in Park et al. 1938; Ray et al. 1938; O.C. Stewart 1939) . . . The eastern limit of their territory continued from the east side of Mono Lake diagonally north through central Nevada, following in that region the crest of the Desatoya Range. It further coincided approximately with the present Oregon-Idaho state line as far north as the outlets of the Weiser and Powder rivers beyond the great bend of the Snake River. [Fowler and Liljeblad 1986:435].

Several relatively distinct bands were identified in studies conducted by Stewart (1939; 1941). Park (in Fowler 1989) listed five major Northern Paiute bands mostly located within Nevada: *kuyuítüked* (*Chasmistes cujus* eaters), *toítüked* (tule eaters), *agaítüked* (trout eaters), *hápDtüked* (English translation unknown), and the *wadátüked* (English translation unknown). He referred to these Northern Paiutes as Paviotsos. The *kuyuítüked* lived along the lower Truckee River and along the shores of Pyramid and Winnemucca lakes (Fowler 1989; Stewart 1939). The Inter-Tribal Council Of Nevada (ITCN) have noted that descendants of the *kuyuítüked* now live on the Pyramid Lake Paiute Reservation (ITCN 1976). The *toítüked* inhabited the Walker River and Walker Lake area (Fowler 1989; Stewart 1939). Descendants of these people can be found on the Walker River Reservation. The *hápDtüked* inhabited the Humboldt River area from Humboldt Lake to the present site of Winnemucca (Fowler 1989; Stewart 1939). Descendants of this band live within the Lovelock Colony (Fowler 1989). The *wadátüked* occupied Long Valley and the area surrounding Honey Lake in what is now California. Today, the Northern Paiutes live on reservations located throughout California, Oregon, and Nevada.

Habitation Patterns

Prior to Euroamerican settlement, Northern Paiute families lived a seasonal semi-nomadic lifeway similar to that of the Western Shoshones. Like the Western Shoshones, families came together in larger camps during the winter season (Steward and Wheeler-Voegelin 1974). Often these camps were located near pinyon caches (Fowler and Liljeblad 1986). Table 2.3 lists 14 Northern Paiute villages identified by Fowler (1992) and Steward (1997). For most Northern Paiute groups, this lifestyle did not change with the acquisition of horses sometime during the late 1840s to early 1850s (Fowler and Liljeblad 1986; Steward and Wheeler-Voegelin 1974).

According to Fowler and Liljeblad (1986:443), Northern Paiute houses were temporary structures:

> The dome-shaped, mat-covered house (*kani, nobi*) was the most common winter structure for most of the Nevada Northern Paiute groups. A smoke hole was left in the top and a doorway in one side, usually facing east or away from prevailing winds. A fire for cooking and warming was in the center inside. The size of the house varied according to the size of the family, but 8 feet to 15 feet in diameter seems to have been the standard. Unlike Western Shoshone houses, some Northern Paiute winter houses were semi-subterranean. Sometimes families used caves or rock shelters as homes. During the summer, windbreaks or sun shades were sometimes utilized. Other structures constructed included sweathouses [Fowler and Liljeblad 1986].

Subsistence

The Northern Paiutes lived in a very diverse ecological zone and, therefore, were able to utilize hunting, plant-gathering, and fishing for subsistence strategies. Similar to the neighboring Western Shoshones, pine nuts and various seeds, such as those from Indian rice grass and sunflowers, were important food resources for the Northern Paiutes. Roots and berries from many different plants were also utilized as food items. Tule, willow, and sagebrush provided materials for clothing and various other items. Tule was used to make house roofs, small rafts, bird decoys, fishing nets, bags, mats, dresses, and aprons. Twined conical baskets and hats, basket caps, baby cradles, seed beaters, and purses were made from willow materials. Men's shirts and women's aprons were made from twined sagebrush bark (Fowler and Liljeblad 1986; Steward and Wheeler-Voegelin 1974; Stewart 1941).

Northern Paiute used "traps, corrals, and other types of game enclosures . . . built of uprooted sagebrush, rocks, and tree limbs" in communal hunting of antelope, deer, desert bighorn sheep, and rabbits (Fowler and Liljeblad 1986:439). Like the Western Shoshones, they utilized the powers of a shaman during antelope drives (Stewart 1941). Other animals hunted included hares, rabbits, marmots, porcupines, ground squirrels, grouse, waterfowl, and insects, like grasshoppers (Fowler and Liljeblad 1986; Stewart 1941).

Fishing was very important to the Northern Paiutes. Techniques varied depending on the type of fish and its habitat. Fishing platforms, nets, harpoons, weirs, and basket traps were used for river fishing. They used gill nets, hooks and lines, spears, and harpoons when fishing in lakes (Fowler and Liljeblad 1986; Stewart 1941). Ice fishing was conducted during the winter months (Stewart 1941). These various fishing techniques were used to catch cutthroat and other trout, Tahoe suckers, cui-ui, dace, chub, redsides, minnows, and other fish (Fowler and Bath 1981; Fowler and Liljeblad 1986; Stewart 1941).

Burial Practices

The burial practices of the Northern Paiutes were similar to those of the Western Shoshones. Cremation was practiced; however, it was generally reserved for witches. The deceased might be buried in rock crevices, caves or rock shelters, or on a hillside. Their houses were either torn down or burned and their belongings distributed among their relatives (Fowler and Liljeblad 1986; Stewart 1941).

Religion and Ceremonies

Northern Paiute religion, like that of the Western Shoshones, was based on shamanism. Stewart (1941) listed three ways in which one became a shaman: through dreams, through inheritance from a close relative, or by visiting particular caves within Northern Paiute territory. A shaman was utilized during antelope drives (Stewart 1941), but ceremonial activities were few. The primary traditional dance was the Circle Dance. Other dances conducted by the Northern Paiutes were more recent adoptions and included the Bear, South or Exhibition, Crazy, and Ghost dances (Stewart 1941).

Oral Traditions

Lowie (1924), Kelly (1938), Steward (1943), and Fowler (1989) are among researchers who documented many Northern Paiute oral traditions. Few of these stories mention specific places; however, several different versions of the story in which Coyote lets loose the animals in the cave and his brother, Wolf is killed and brought back to life mention places in Dixie Valley. Other places that are considered to be sacred are deep lakes and other bodies of water that are inhabited by Water Babies (*pa' oha'a*) and other creatures, like Water Horses *(paapuku*) (Fowler 1992).

2.3.3 Historical Context

The following information has been cited directly from a publically available cultural resources overview study prepared for the BLM (Pendleton et al. 1982):

Jedidiah Strong Smith (1799-1831) was the first American explorer to approach the area. Smith and companions, Silas Gobel and Robert Evans, after leaving the main trapping party camped on the Stanislaus River east of present-day Modesto, crossed Ebbet's Pass in late May 1827. The trio wandered down Silver Creek and crossed into Nevada near Monitor Pass south of present-day Topaz Lake. They continued eastward crossing the Wassuk Range, passing south of Walker Lake. Their route skirted the northern edge of the Bagley Valley section of the BLM Markleeville Planning Unit.

John C. Fremont explored and mapped along the emigrant trail to Oregon in 1843. His route took him south from the Dalles on the Columbia River, entering Nevada just east of the California border. The party spent New Year's Day northwest of the Black Rock Desert. Fremont mapped Pyramid Lake and, on January 16, 1844, camped on the Truckee River a short distance north of the present town of Wadsworth. The following year, Elisha Stevens, a 40 year old commander of a wagon train of 46 people, made a momentous decision at the Humboldt Sink. Instead of following the circuitous routes to the south found by Bidwell-Bartleson and Joseph Walker, Stevens' well-disciplined party decided to travel a direct route west to Sutter's Fort. They enlisted the aid of a Native American guide who led a scouting party to a river at the present town of Wadsworth. The party (narrowly missing a fight with the Paiutes at the Humboldt Sink) hastily moved to the river and recuperated there for two days. The emigrants named the river Truckee for their Indian guide and it has since so been known (though John C. Fremont had named it Salmon Trout River a year earlier)

In 1845, Fremont passed along Truckee River on the emigrant trail on his way to California. Nothing new was added to this part of Nevada's geography as this route was well-known by then. Gold was discovered near Sutter's Fort in 1848 and this started mass emigration to California. Two popular routes were used in the region. One trail followed the Truckee River and the other was along the Carson River. From Wadsworth, the Truckee River Route followed the river, crossing it several times. Upon entering the Truckee Meadows, where Jamison's Trading Post was built in 1852, the trail turned south to Huffaker Hills to avoid the sloughs and marshes along the river. Short and Peckman Lanes are now on the original trail. The route extended from the site of Junction House on U.S. Highway 395 near the Reno Coliseum, through the present county golf course, and crossed the Truckee River at Mayberry Bridge (Pendleton et al. 1982).

In 1850, gold was discovered in Gold Canyon, and the Territory of Utah was created, which included all of the lands now within the State of Nevada. Several trading posts were rapidly established in the area, and Carson County was created on January 17, 1854. Three years later, the Mormon settlers in Nevada were recalled to Salt Lake City to help bolster the Mormon cause against the United States government. The first newspaper in Nevada, the Territorial Enterprise, was started in Genoa in 1858, and Virginia City was so designated the following year. The year 1859 was perhaps Nevada's most momentous year. Gold was discovered at Gold Hill on January 28, and more was found near the head of Sixmile Canyon on June 11. These two strikes heralded the tremendous "rush to Washoe" the following year (Pendleton et al. 1982).

In 1860, the "rush to Washoe" began, bringing hundreds, then thousands of settlers seeking their fortunes in gold and silver operations on the Comstock. The Territory of Nevada was created in 1861, with James W. Nye of New York named as Territorial Governor. The Pony Express ran briefly during this period. The state of Nevada was admitted into the Union in October of 1864, and the Central Pacific Railroad was completed to the newly-formed town of Reno in 1868.

The Comstock towns continued their boom, reaching a peak population of about 17,500; but the end was heralded by a fire that leveled most of Virginia City's business district in October 1875. The town was quickly rebuilt, but the pace slowed as the mines of the Comstock gradually played out. By 1880, the Comstock population sagged to 11,000, reaching a low of 2700 in 1900 (Pendleton et al. 1982).

One of the longest roads in the region, the Wadsworth-Columbus Freighting Route, was established in 1863. It operated up to 1882 when the construction of the Carson and Colorado

Railroad made the route obsolete. The freighting route extended east of Wadsworth past Hazen, St. Clair, Salt Wells, Rock Springs, Deadhorse Well, Sargent, Deep Well (Luning), and Soda Springs to Columbus.

After the decline of the Comstock, Reno, Sparks, and Carson City became the local population centers. The University of Nevada, originally established in Elko, was moved to Reno in 1885. During the late 19th and early 20th centuries, several major sporting events took place in the Reno area, and the local economy was gradually bolstered by prospering divorce and gambling industries (Pendleton et al. 1982).

Placer Mining

The USGS has prepared a summary of placer gold deposits in Nevada (Johnson 1973), from which much of the following is borrowed directly. The first authenticated discovery of placer gold in Nevada was made in 1849 by Abner Blackburn, a member of an emigrant train to California, at the junction of Gold Canyon and the Carson River at the present site of Dayton, Lyon County (De Quille, 1891; Vanderburg, 1936a). Parties of men worked the gravels in Gold Canyon and nearby Six Mile Canyon, Storey County, for 8 years before the source of the placers, the Ophir silver lode, was discovered by Peter O'Reiley and Patrick McLaughlin in 1857 while digging a small water hole for placer mining in Six Mile Canyon (De Quille, 1891).One hundred and fifteen placer districts in Nevada are estimated to have produced a minimum of 1,700,000 ounces of placer gold from 1849 to 1968.

Johnson (1973) has provided the following technical details relating to the Olinghouse (White Horse) mining district, which intersects and continues northwest of the project area. Gold placers have been documented in an alluvial basin about 1 mile long and ½ mile wide and in a tributary ravine north of Olinghouse Canyon and south of Green Hill in the main lode mining area of the district. The gravels in the alluvial basin and tributary ravine average about 20 feet deep. The gold is concentrated in the lowermost 5-6 feet of gravel above bedrock. Along the south and east margins of Green Hill, the placers are eluvial, whereas those in drainages from Green Hill are alluvial deposits transported 1 mile or more. Near the edge of the range at Frank Free Canyon, shafts and churn drills sampled gravels to a depth of 75 feet. The placers in the Olinghouse district were extensively worked between 1860 and 1900 and were said to produce considerable gold, but no authentic records of placer gold production are known. The total placer and lode-gold production of the district before 1900 has been estimated at about $2I8,000, although some estimates indicate as much as $500,000 (Johnson 1973). During the 20th century, the Olinghouse placers have been worked almost continuously, but mostly on a small scale. The rich gravels were reached by drifts concentrated in the center of the alluvial basin, where they apparently follow a channel to the south towards Olinghouse Canyon. In a flat part of the alluvial basin (approximately north edge of sec. 29), a small dragline dredge worked the gravels in 1965 by digging a square pit about 15 feet deep, then floating the dredge in the water-filled pit and back-filling with tailings. The operation was not successful because of difficulty in keeping water in the pit. While no documentation has been acquired for the now abandoned retention basins within the central project section, it is likely that a similar method was used for gold extraction here at a later date. Another operation dredged gravels during the period 1963-64 in the tributary ravine (east side of the road to the mining area, center sec. 29). Small gold-bearing quartz and calcite veins in the andesites and intrusive granodiorite porphyry (Miocene and Pliocene) at Green Hill are the source of the placer gold. The gravels in which the gold is found consist mostly of sub-angular andesite and basalt debris derived from the adjacent hillsides.

3 RESEARCH METHODS

The present study included a mix of predictive analyses and intensive-pedestrian survey sampling. The intent of this strategy was to inspect representative sample areas throughout the project with increased relative likelihood for containing cultural resources.

The predictive model was established through archival research, examination of high-resolution aerial imagery, and pedestrian survey. Geologic features were also used to develop the weighted model, including slope, aspect, landform, and drainages (see Confidential Appendix A, maps 1-7). This information was compiled in a GIS database to produce visual aids in landform sensitivity throughout the project site.

The project site was revised to include an additional 53 acre area (within Section 19) subsequent to archaeological fieldwork. Based on review of predictive factors and drone aerial imagery, the attributes of the added area are consistent with other portions of the APE and sampling by pedestrian survey is considered unnecessary due to its low potential to modify the findings of the present study.

An increased potential for encountering historic-age mining and refuse deposit sites within the northwest project area was predicted through proximity to geologic formations suitable to contain gold and mineral deposits, as guided by review of historical records. Review of records search information also indicated an increased density of historic-age archaeological sites in this area.

Survey samples also targeted the western edges of the project areas, as they were nearest the recorded shorelines of pluvial Lake Lahontan (Garside, and House 2005). The shoreline would have receded across this surveyed area (west to east) sometime during the Early Holocene as the region became more warm and arid. Such areas were considered to have a greater potential to contain exposed archaeological material on the surface.

The Secretary of the Interior has issued Standards and Guidelines for Archeology and Historic Preservation (48 FR 44720–44726), which are used for the identification and evaluation of historic properties and to ensure that the procedures are adequate and appropriate. The identification and evaluation of historic properties are dependent upon the relationship of individual properties to other similar properties (NPS and ACHP 1998:18–20). Information about properties regarding their prehistory, history, architecture, and other aspects of culture must be collected and organized to define these relationships (NPS 2009). This was the intent of the present study.

This investigation consisted of an archaeological pedestrian sample survey of the APE augmented by a records search of the project APE and a one-mile radius around it using the Nevada Cultural Resources Information System (Confidential Appendix B). Following Bureau of Land Management (BLM) standards, which are appropriate for most projects in general, survey techniques are loosely grouped into two categories: reconnaissance and intensive (BLM 2004; NPS 2009). The choice of survey category depends on the level of effort required for a particular project, which can vary depending on the nature of the properties or property types, the possible adverse effects on such properties, and agency requirements (NPS and ACHP 1998). The selection of field survey techniques and level of effort must be responsive to the management needs and preservation goals that direct the survey effort. For any survey, it is important to consider the full range of historic properties that may be affected, either directly or indirectly, and consider strategies that will minimize any adverse effects and maximize beneficial effects on those properties (BLM 2004; NPS 2009; NPS and ACHP 1998).

The current survey methods can be classified as a reconnaissance since short-interval transect spacing and full documentation of cultural resources was completed within designated sample areas of the larger APE. Survey staff exceeded the applicable Secretary of Interior Professional Qualifications Standards for archaeological survey in these areas. Dudek archaeologists Sarah Brewer, Sarah Lewis, and Amber Tedrow surveyed sample areas with transects spaced no more than 15 meters apart. All work was directed and overseen by Adam Giacinto, MA, RPA and Dr. Micah Hale, RPA (Appendix C). A Global Positioning System (GPS) receiver with sub-meter accuracy, loaded with shapefiles of previously recorded resources and project boundaries was used to verify the accuracy of the survey coverage and the location of previously mapped resources. Evidence for buried cultural deposits was opportunistically sought through inspection of natural or artificial erosion/excavation exposures and the spoils from rodent burrows. Field recording and photo documentation of resources, as appropriate, was completed.

Historic research was also performed to better understand the history of land use of the project area. This research consisted of reviewing historic topographic map and aerials (www.historicaerials.com). Additional resources consulted included USGS maps, US Bureau of Mines documents, and information provided from previous archaeological investigations.

Documentation of cultural resources complied with the Secretary of the Interior’s Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44740), Archaeological Resource Management Reports (ARMR): Recommended Contents and Format (ARMR Guidelines) for the Preparation and Review of Archaeological Reports. All cultural resources identified during this inventory were recorded on Nevada IMACS forms.

4 RESULTS

The following chapter provides the results of the NVCRIS records search and pedestrian survey.

4.1 Records Search Results

Previously Recorded Resources

The NVCRIS records search included the project APE and a one-mile radius area (Figure 3). Seven previously recorded sites fall within the APE based on NVCRIS records. Of these seven resources, two are prehistoric in age (lithic scatters) and the remaining are historic-age (a mine, refuse scatters, and road segments). One resource (26-WA7293) was incorrectly mapped in NCCRIS digital files, and is located north (outside) of the project APE. An additional 62 cultural resources have been previously recorded within the surrounding one-mile search radius buffer, but outside of the project APE. These include 53 historic-age sites (principally mining adits and prospect pits), six prehistoric sites, and three sites with both prehistoric and historic age cultural material. All seven resources intersecting the project area have been evaluated as not eligible for NRHP listing (Table 2).

Table 2. Previously Recorded Resources within the Project APE

Trinomial	Period	NRHP Eligibility	Description
26-WA2006	Prehistoric	Not Eligible	Sparse Lithic Scatter
26-WA6471	Historic	Not Eligible	Mine
26-WA7051	Prehistoric	Not Eligible	Lithic Scatter
26-WA7052	Prehistoric	Not Eligible	Lithic Scatter
26-WA7061	Historic	Not Eligible	Refuse Scatter
26-WA7062	Historic	Not Eligible	Road Segment
26-WA7063	Historic	Not Eligible	Road Segment
26-WA7293	Historic	Not Eligible	Refuse Scatter – Incorrectly Mapped

<u>26-WA2006</u>

This prehistoric site was recorded by A. Dansie in 1974. The site consists of a lithic blade and a possible Rose Springs corner notched chert projectile point. The artifacts were observed on the surface during an archaeological pedestrian survey. The artifacts were collected and further site evaluation was not recommended; the site was considered not eligible for listing in the NRHP under any of the significance criteria.

26-WA5120

This historic site was recorded by Sue Ann Monteleone as part of the Truckee Meadows Proposed Gas Line Cultural Resources Survey in 1990. This site consists of a historic refuse scatter (cans, wood fragments, etc) with items that date ca. 1900 to 1940. No surface collection or evaluation was mentioned in the site record for the resource. The site was considered not eligible for listing in the NRHP under any of the significance criteria.

26-WA6471

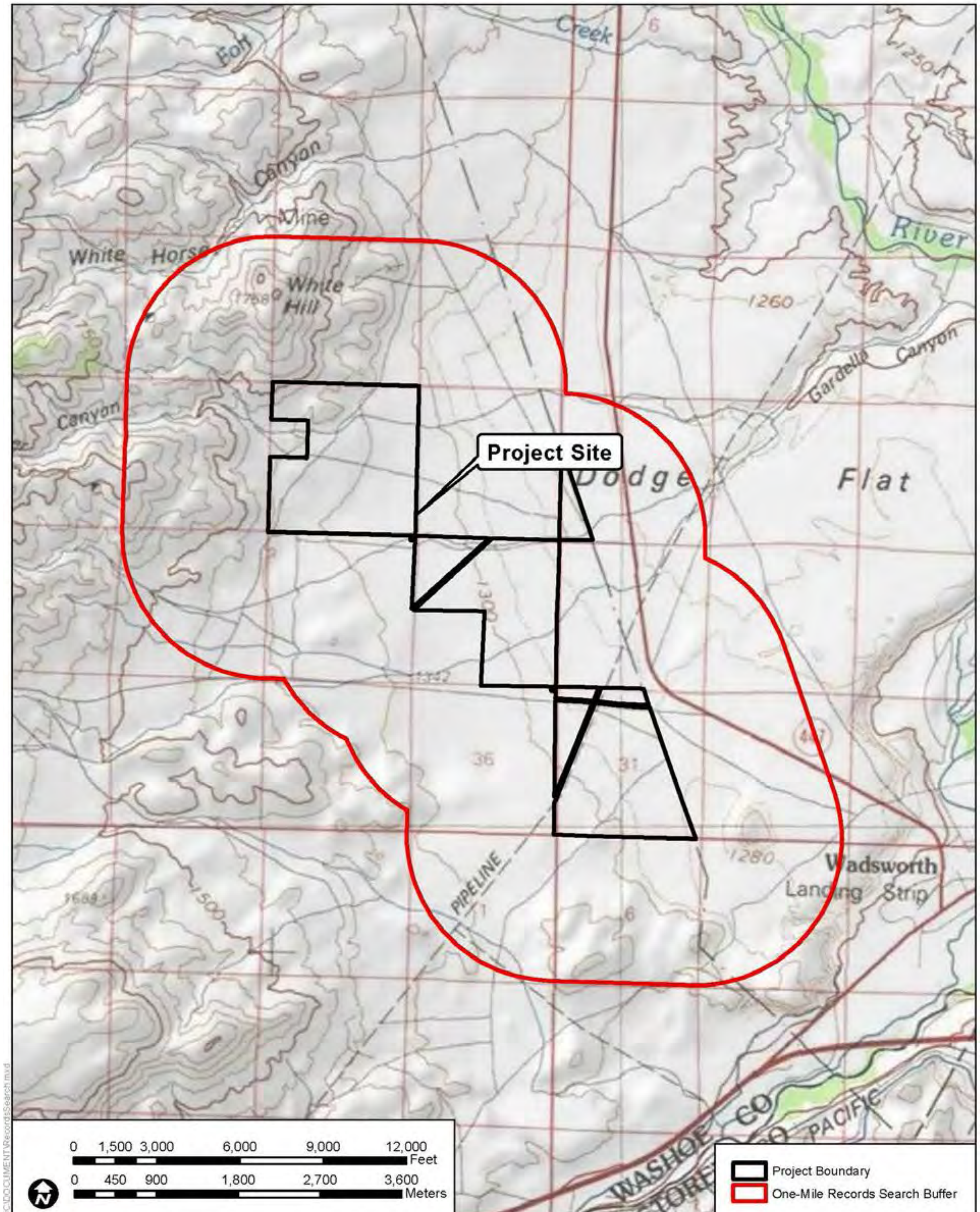
This historic site was identified by Allen McCabe during a pedestrian survey for the Alta Gold Co. Olinghouse Mining Project in 1997. The site is a historic mine area comprised of a collapsed adit and two hand-excavated prospects. Minimal artifacts associated with the mine were observed. The site dates to approximately the early 1900s. It was determined that the mine is not associated with important events or persons, or a particular or distinctive mining technology as represented by the features. The site was considered not eligible for listing in the NRHP under any of the significance criteria.

26-WA7051

This prehistoric site was recorded by D.C. Young Jr. as part of the Tuscarora Wadsworth Lateral Project in 2001. The site consists of a lithic scatter. Archaeologists tested the site with 50 x 50 centimeter probes to a maximum depth of 50 centimeters in order to determine if the site continue below surface. The probes determined that the site contained low potential for buried cultural deposits. The site is considered not eligible for listing in the NRHP under any of the significance criteria.

26-WA7052

This prehistoric site was recorded by D.C. Young Jr. as part of the Tuscarora Wadsworth Lateral Project in 2001. The site consists of a lithic scatter. The artifacts were limited to a surface scatter. The site was considered not eligible for listing in the NRHP under any of the significance criteria.



DUDEK

8652

SOURCE: USGS 7.5-Minute Series - Fernley West, Olinghouse, and Wadsworth Quadrangle
Township 20N / Range 23E / Section 01, 02
Township 20N / Range 24E / Section 05, 06, 07, 08
Township 21N / Range 23E / Section 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 35, 36
Township 21N / Range 24E / Section 18, 19, 29, 30, 31, 32

Figure 3
Records Search Map Index

DODGE FLATS SOLAR ENERGY PROJECT

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26-WA7061

This historic-age site was recorded by Allen McCabe as part of the Tuscarora Wadsworth Lateral Project in 2001. The site consists of a historic refuse scatter (consumer cans, metal discs, kitchenware, etc), with items dating from 1910 to the 1950s. The site area measures 230 x 87 meters in size. The site has been impacted by construction disturbances and road maintenance. It was observed that the artifacts are a result of secondary dumping of household refuse. The site is considered not eligible for listing in the NRHP under any of the significance criteria.

26-WA7062

This historic-age road segment was recorded by Allen McCabe as part of the SPPC 345 kV Line Project in 2001. This resource consists of a historic road segment labeled "Pyramid Lake to Derby" that corresponds to a route on the 1911 GLO Plat map. A two-track road was observed during survey in the vicinity of this mapped route, however no associated features or artifacts were observed. Historic road or associated artifacts was observed. The site was considered not eligible for listing in the NRHP under any of the significance criteria.

26-WA7063

This historic resource was recorded by Allen McCabe as part of the SPPC 345 kV Line Project in 2001. This resource consists of a historic road segment that corresponds to the road location that is found on the 1882 and 1911 GLO Plat maps. No evidence of the intact historic road or associated artifacts was observed. Continued use and maintenance of the road has destroyed all evidence of the original historic road. The resource is considered not eligible for listing in the NRHP under any of the significance criteria.

26-WA7293

This historic resource was recorded by Cherie K. Walth as part of the Wadsworth Compressor Station Project in 2004. This site consists of a sparse refuse scatter that dates early as the 1920s to the 1950s. Artifacts include bottles, sanitary cans, metal, and glass fragments. This site is recommended as not significant and is considered not eligible for listing in the NRHP under any of the significance criteria. It was incorrectly mapped in NVCRIS GIS data, and is located north (outside) of the project limits.

Previously Conducted Studies

The NVCRIS indicated that 20 cultural studies have been conducted within one-mile of the project area. Of these, 11 have intersected portions of the project area (Table 3).

Table 3. Previous Technical Studies within the One-Mile Search Area

Report Number	Authors	Date	Title
Previous Technical Studies Intersecting the Project Area			
2793	Lane, Elizabeth	2008	*A Cultural Resource Summary for the Olinghouse Term Grazing Permit Renewals*
2792	Lane, Elizabeth	2008	*A Cultural Resource Summary for the White Hills Allotment Term Grazing Permit Renewal*
16-245	Hatoff, Brian W.	1983	*Cultural Resources Report: Southern Pacific Olinghouse Plan of Operation NV-36-83-11(P): Cr Report No. 3-859(N0 (from NADB)*
16-39	Touhy, D.	1976	*NSM/NAS Cultural Resources Report: Pyramid Lake Fence Rehibilitation, Washoe County, Nevada*
16-459	Kautz, R. R.	1989	*A Class III Cultural Resources Inventory of the Proposed New Gold, Inc. Placer Mining Operations at Lower Olinghouse, Near Wadsworth, Washoe County, Nevada*
16-494	Kautz, R.R. and C. Pinto	1990	*A Class III Cultural Resources Inventory of the Proposed Truckee Meadows Gas Line Project from Dodge Flat to Warm Springs Valley, Washoe County, Nevada*
16-494	Kautz, R.R. and C. Pinto	1990	*A Class III Cultural Resources Inventory of the Proposed Truckee Meadows Gas Line Project from Dodge Flat to Warm Springs Valley, Washoe County, Nevada*
16-495	Burke, T.	1990	*Technical Memorandum No.3: Part D: Cultural Resources Reconnaissance Survey for the Site 1 Alignment in Dodge Flat, Washoe Co. NV, Alternate for Reno-Sparks Effluent Pipeline-waste*
16-975	McGuire Kelly R. and D. Craig Young	2001	*A Class III Cultural Resources Inventory for the Proposed Tuscarora 2002 Expansion Project/White Horse to Tracy 345-kV Line Project, California and Nevada.*
18-72	Busby, Colin I., J. C. Bard, B. Dawson, and P. H. Ogrey	1979	*Class III Cultural Resources Inventory of the Sierra Pacific Power Company's Transmission Line Corridor: Valmy to Mira Loma, Nevada (from NADB)*
18-9	Rusco, Mary and Evelyn Seelinger	1974	*Report of Archaeological Reconnaissance Along Proposed 230KV Transmission Line Right-of-Way of Sierra Pacific Power Company, Part I, Tracy, Nevada to Valmy, Nevada*
Previous Technical Studies within One-Mile of the Project Area			
18554	Malinky Harmon, Barbara and Mella Rothwell Harmon	2011	*A Cultural Resource Inventory for the Pyramid Lake Paiute Tribe's Proposed Wadsworth Bypass Project, Washoe County, Nevada*
5385	Spath, Carl	2010	*2010 Paiute Pipeline Expansion Project Douglas and Washoe Counties, Nevada Overview of Cultural Resources*
16-10	Harrigan, William A.	1975	*Cultural Resources Report: Installation of Approximately 3/4 Mile of 12.5 Kv Electric Service Line (from NADB)*

Table 3. Previous Technical Studies within the One-Mile Search Area

Report Number	Authors	Date	Title
16-245	Hatoff, Brian W.	1983	*Cultural Resources Report: Southern Pacific Olinghouse Plan of Operation NV-36-83-11(P): Cr Report No. 3-859(N0 (from NADB)*
16-494	Kautz, R.R. and C. Pinto	1990	*A Class III Cultural Resources Inventory of the Proposed Truckee Meadows Gas Line Project from Dodge Flat to Warm Springs Valley, Washoe County, Nevada*
16-495	Burke, T.	1990	*Technical Memorandum No.3: Part D: Cultural Resources Reconnaissance Survey for the Site 1 Alignment in Dodge Flat, Washoe Co. NV, Alternate for Reno-Sparks Effluent Pipeline-waste*
16-515	Hufnagle, J.	1990	*BLM Cultural Resources Report: Olinghouse County Road Upgrading*
16-652	Kautz, R. and J. Johnson	1993	*A Cultural Resource Inventory of Two Blocks: One on Wadsworth and One in Nixon, Nevada*
18-94	Budy, Elizabeth	1979	*Cultural Resources Survey of the Proposed Reno-Sparks Sewage Effluent Study (from NADB)*

The most pertinent of these studies (Lane 2008) was completed for the Olinghouse mining district grazing allotment project. Based on research of files at the CCFO and the Nevada State Museum, the allotment contains several locations of known cultural resources. To date, in and immediately adjacent to the BLM-managed lands of the Olinghouse Allotment, known cultural resources represent significant past human use of the landscape. Previous cultural resources investigations within the allotment have resulted in a relatively large amount of inventory. Previous inventory within the allotment comprises 5,456 acres (about 15.3% of the allotment) and has identified 143 sites, including numerous historic properties. Inventories within and within a mile of the allotment comprise 8,646 acres and have identified 219 sites. Cultural resources within the allotment include prehistoric-period lithic scatters, rock shelters, stone alignments, task sites, and camp sites ranging from the Middle Archaic through the nineteenth-century/protohistoric era. Also present are historic-period debris scatters, a ranch complex, woodcutters' camps and wagon roads, hunting blinds, stone structures and buildings, roads, limited settlement, transportation (including segments of the Nevada Railroad grade), mining complexes, and prospects. Based on review of range use data and reports on areas previously inventoried in or near the allotment, livestock grazing was determined not to represent a significant impact to known historic properties.

4.2 Field Survey Results

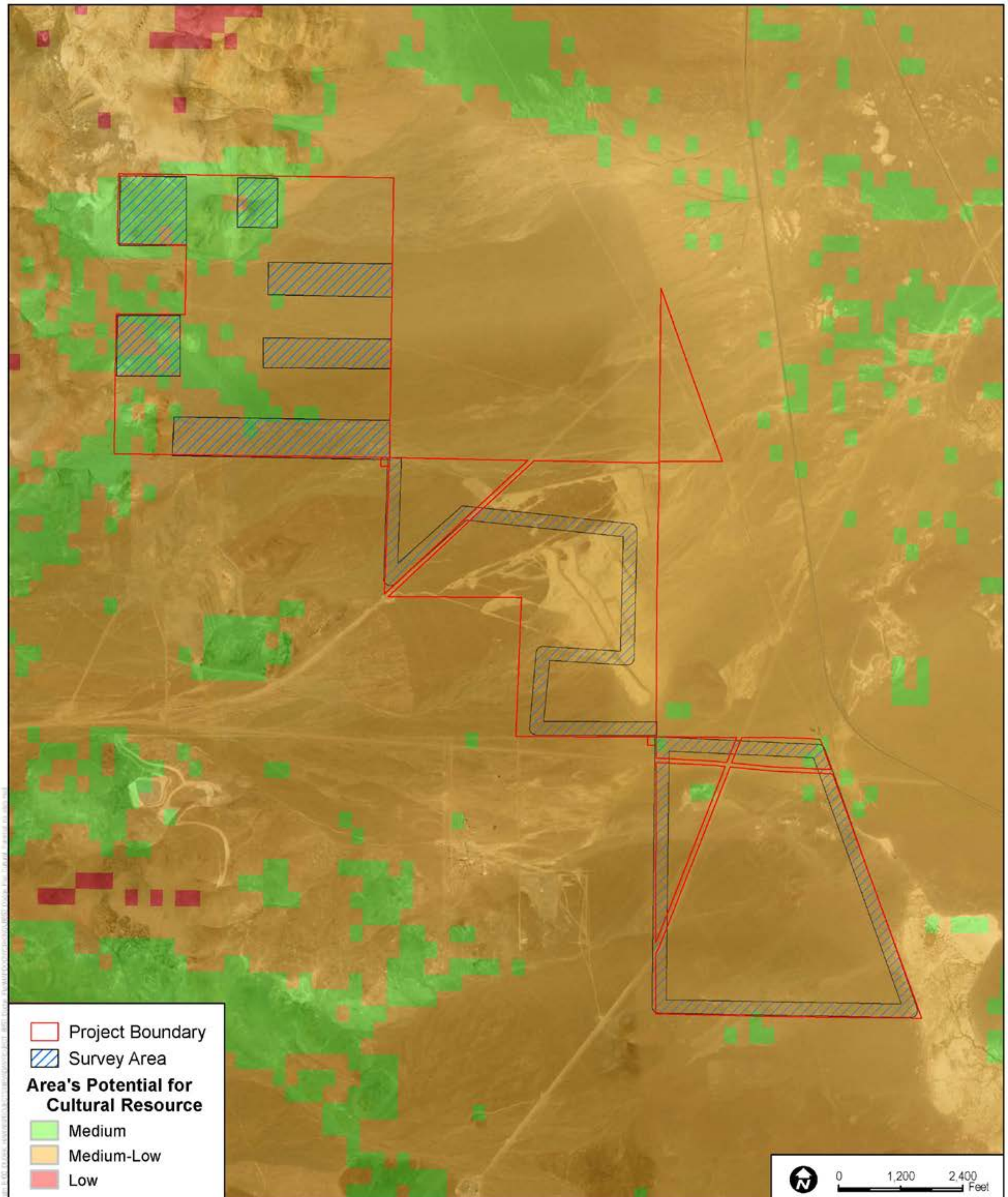
Maps were prepared depicting results of the predictive model, identifying areas based on archaeological sensitivity (i.e., the probability of encountering archeological resources). These maps are provided in Appendix A. Areas identified for pedestrian survey were primarily based off these maps, supplemented by survey areas placed subjectively to investigate project APE boundaries or other areas of interest not identified by the predictive model (Figure 4).

The intensive pedestrian survey of samples of the project APE was completed from December 6 through December 9, 2016. Survey applied standard archaeological methods and techniques. Ground surface visibility was very good (approximately 90%), with the exception December 8, during which snow obscured the ground surface in many areas. Large portions of the project APE have been disturbed through an extended history of off-road activity and mining. Most notably, mining disturbances were observed within the eastern portion of the central project area. This area has been graded in rectangular benches with surrounding levees. It appears that at least some of these areas were used as retention basins at some point. USGS maps indicate the presence of a prospect and borrowing pit in this area, which generally consists of pluvial lake bank Sehoo Alloformation deposits. In a less disturbed context, this area would likely form desert pavement. Evidence of substantial past mining activity was also observable in the northwest project area, primarily in proximity to the low hills leading northwest to the Olinghouse (White Horse) mining district.

A total of five newly recorded cultural resources were recorded within the project area during survey. These included three mining sites/complexes, one historic-age refuse deposit, and an isolated prehistoric stemmed projectile point (Confidential Appendix A, map A.8).

DF-SB-S-01

This newly recorded mining complex, measuring approximately 250 x 160 meters in size, was recorded in the northwest project area (Section 23). This area intersects the mapped boundaries of the Olinghouse mining district on file with the US Bureau of Mines. Mining history in this area is unclear, but records suggest that this was claimed by White Horse Placer or Tiger Placer as recently as the 1970s. The site includes 10 features and a concentration of historic-age refuse. Features include six prospect pits, three piles of mining tailings, and one adit. The refuse concentration includes approximately 25 evaporated milk cans, 13 fragments of glass (including aqua, solarized amethyst, and olive), and six ceramic fragments. Cultural constituents date from the late 1800s and early 1900s.



SOURCE: Dudek / Google Earth Aerial Imagery (2013)

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FIGURE 4
Dodge Flat Cultural Model

Dodge Flat

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DF-SB-S-02

This newly recorded mining complex, measuring approximately 70 x 10 meters in size, was recorded in the northwest project area (Section 23). This area intersects the mapped boundaries of the Olinghouse mining district on file with the US Bureau of Mines. Mining history in this area is unclear, but records suggest that this was claimed by White Horse Placer as recently as the 1970s. The site includes a total of three prospect pits. Similar sites in the areas suggest the prospects date to the early 1900s.

DF-SB-S-03

This newly identified mining adit was identified in the northwest project area (Section 23), and measures 3.5 x 3.5 feet. This area intersects the mapped boundaries of the Olinghouse mining district on file with the US Bureau of Mines. Mining history in this area is unclear, but records suggest that this was claimed by White Horse Placer as recently as the 1970s.

DF-SB-S-04

This newly identified historic-age refuse scatter, measuring 335 x 145 meters in size, was identified near the eastern edge of the central project area (Section 25). The scatter includes at least seven concentrations of 1930-1960s era refuse. This scatter continues eastward into the boundaries of the Pyramid Lake Paiute Tribe Reservation. It is likely that this area was used for reoccurring dumping, and has undoubtedly been transported from elsewhere. This refuse is in the vicinity of the large disturbed area within the central portion of the project area that was likely subject to mining, however it is unclear if this refuse is related.

DF-SB-I-01

This basalt prehistoric projectile point (Figure 5) was identified on the surface within the northwestern portion of the project area (Section 23).

Figure 5. DF-SB-I-01: Gypsum Series Projectile Point

The point measures 5.9 cm in length, 3.9 cm in width, and 1.1 cm thick. One shoulder is barbed, while the other is upward-horizontal. No basal grinding was observed. The form of the point is consistent with Gypsum or Gatecliff Contracting Stem types, generally dating 5000-3000 years BP (Thomas 1981). The use of such local basaltic material and low artifact formality has been most commonly attributed to projectile points during the Early-Middle Archaic.

4.3 Tribal Correspondence

Dodge Flat Solar LLC has initiated correspondence with representatives of the Pyramid Lake Paiute Tribe (PLPT). PLPT will be provided the opportunity to review the results of the present study as well as future investigations. No additional information relating to discussions with local tribes or related tribal resources has been provided to date.

5 SUMMARY AND MANAGEMENT CONSIDERATIONS

The current inventory was completed on privately owned unincorporated land with the intent of identifying significant cultural resources within the Project APE. This study also incorporates Section 106 of the NHPA considerations. Dudek's cultural resources sample survey of the project APE suggests that there is a low potential for the inadvertent impact to significant archaeological or historic-era resources or deposits. A records search with one-mile buffer was completed using the online NVCRIS database, and previously completed archaeological reports and site records were reviewed. Additional resources consulted included historical imagery, mining records, geologic maps, and academic publications. All seven sites previously identified within the project APE were previously determined not eligible for NRHP listing. Recorded resource types included historic-era roads, refuse scatters, mining features, as well as prehistoric lithic artifact scatters.

Prior to archaeological fieldwork, areas of increased relative sensitivity were determined through review of high-resolution drone aerial imagery, and weighted modeling using slope, aspect, landform, drainages, and information relating to previously recorded sites (see Confidential Appendix A maps). Different portions of the project were more likely to contain historic-age resources and prehistoric age resources. Pedestrian survey sampling was then completed by three archaeologists over the course of four field days to confirm the accuracy of this modeling. An increased potential for encountering historic-age mining and refuse deposit sites within the northwest project area was predicted through proximity to geologic formations suitable to contain gold and mineral deposits, as guided by review of historical records. Areas along the western edges of the project, nearest the recorded shorelines of pluvial Lake Lahontan, were considered to have the greatest potential to contain prehistoric material observable on the surface. The majority of the project APE was observed to have been severely disturbed by past mining activities during this survey.

A total of four historic-age sites (three mining sites and one refuse scatter) and an isolated prehistoric projectile point were identified through this survey. Review of Dudek's survey results against NVCRIS records and previous technical studies suggested that a representative range of resource types has been documented. The effectiveness of the predictive modeling was largely confirmed, allowing for management recommendations to be made based on this sampling information.

Should it be determined infeasible to avoid the newly identified resources, additional documentation by a qualified archaeologist should occur prior to any impacts. All features and cultural constituents at sites DF-SB-S-01, DF-SB-S-02, DF-SB-S-03, and DF-SB-S-04 have not been fully recorded. However, based on field information to date, it is likely that these resources would not be considered eligible for NRHP listing under any significance criteria after additional research and documentation is completed. The isolate DF-SB-I-01, is not significant in itself due to lack data potential (Criterion D); however, it could be collected prior to fieldwork and donated to a local archaeological repository, such as the University of Nevada, Reno. Based on the information gathered to date from records search information, archival research, predictive modeling, and pedestrian survey, the project is unlikely to impact any significant cultural resources.

In the event that archaeological material should be identified by project personnel during earth moving activities, work should be temporary halted, and the County consulted. A qualified archaeologist will be assigned to review the unanticipated find, and evaluation efforts of this resource for NRHP listing will be initiated in consultation with the County. Should human remains be discovered, work will halt in that area until appropriate treatment has been determined. If Native American remains are present, the County and Pyramid Lake Paiute Tribe should be immediately contacted to discuss a respectful and appropriate solution.

6 REFERENCES

36 CFR 60. National Register of Historic Places.

36 CFR 800.1–800.16 and Appendix A. Protection of Historic Properties.

48 FR 44720–44726. "The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to the National Historic Preservation Act." April 24, 1998.

Basgall, M. E., L. Johnson, and M. Hale. 2002. "An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California." Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Bell, John W., Larry J Garside, and P. Kyle House 2005. Geologic Map of the Wadsworth Quadrangle, Washoe County, Nevada. United States Geologic Survey.

Bengston, Ginny 2003. Northern Paiute and Western Shoshone Land Use in Northern Nevada: A Class I Ethnographic/Ethnohistoric Overview. Cultural Resources Series No. 13. Bureau of Land Management.

BLM (Bureau of Land Management). 2004. "The Foundations for Managing Cultural Resources." Section 8100 in the *BLM Manual*. Release no. 8-72. December 3, 2004.

2008. Environmental Assessment Olinghouse Allotment – Term Grazing Permit. EA-NV-030-08-017.

Camp, Anna J. 2009. Pre-Archaic Occupations in the West Arm of the Black Rock Desert. MA Thesis, University of Nevada, Reno.

Davis, E.L. 1978. The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country. Los Angeles, California: Natural History Museum of Los Angeles County.

Davis, Jonathan O. 1982 Bits and Pieces: The Last 35,000 Years in the Lahontan Area. In Man and Environment in the Great Basin, edited by David B. Madsen and James F. O'Connell, pp. 53-75. Society for American Archaeology Papers 2, Washington

De Quille, Dan, 1891. The discovery of the Comstock lode: Eng. and Mining Jour.,v. 52, p. 637-638.

Dillon, Brian D. 2002. "California PalaeoIndians: Lack of Evidence, or Evidence of a Lack?" In: *Essays in California Archaeology: A Memorial to Franklin Fenenga*, edited by William J. Wallace and Francis A. Riddell, 110–128. Contributions of the University of California Archaeological Research Facility, No. 60. Berkeley.

Elsasser, Albert and Willis Gortner 1992. The Martis Complex Revisited. Sage Journals. 12(4):361-376. University of California, Berkeley.

Elston, Robert G. 1982 Good Times, Hard Times: Prehistoric Culture Change in the Western Great Basin. In Man and the Environment in the Great Basin, edited by D.B. Madsen and J.F. O'Connell, pp. 186-206. SAA Papers, No. 2. Society for American Archaeology, Washington, D.C.

1986 Prehistory of the Western Area. In Handbook of North American Indians, vol. 11, Great Basin, edited by W.L. d'Azevedo, pp. 135-148. Smithsonian Institution Press, Washington, D.C.

Elston, Robert G., Jonathan O. Davis, and G. Townsend 1977. *The Archaeology of the Tahoe Reach of the Truckee River*. Submitted to the Tahoe-Truckee Sanitation Agency, Nevada.

Foster, D., and J. Betts 1996. The Pleistocene-Holocene Transition Along the Pacific Coast of North America. In: *Humans at the End of the Ice Age*, edited by L.G. Strause, B.V. Eriksen, J.M. Erlandson, and D.R. Yesner, pp. 277-301.

1989 Willard Z. Park's Ethnographic Notes on the Northern Paiute of Western Nevada, 1933-1944. University of Utah Anthropological Papers 114.

1992 In the Shadow of Fox Peak: An Ethnography of the Cattail-Eater Northern Paiute People of Stillwater Marsh. Cultural Resource Series Number 5. U.S. Department of the Interior, Fish and Wildlife Service, Region 1, Stillwater National Wildlife Refuge, Fallon, Nevada.

Fowler, Catherine S., and Sven Liljeblad 1986 Northern Paiute. In Great Basin, edited by Warren L. d'Azevedo, pp. 435-465. Handbook of North American Indians, Vol. 11, W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D. C.

Golla, V. 2007. "Linguistic Prehistory." In *California Prehistory: Colonization, Culture, and Complexity*, edited by T.L. Jones and K.A. Klar, 71–82. New York, New York: Altamira Press.

2011. California Indian Languages. University of California Press, CA.

Heizer, Robert F., and Albert B. Elsasser. 1953. *Some Archaeological Sites and Cultures of the Central Sierra Nevada.* University of California Archaeological Survey Reports 12. Berkeley.

Hull, Kathleen L. 2007. "The Sierra Nevada: Archaeology in the Range of Light." In California Prehistory: Colonization, Cultural and Complexity, edited by Terry L. Jones and Kathryn A. Klar. Lanham, MD: AltaMira Press.

Inter-Tribal Council Of Nevada (ITCN) 1976. Numa: A Northern Paiute History. Inter-Tribal Council of Nevada, Reno.

Johnson, Maureen 1973. Placer County Gold Deposits of Nevada. Geological Survey Bullitin 1356: A Catalog of Location, Geology, and Production with Lists of Annotated References Pertaining to Placer Deposits.

Kelly, Isabel 1938 Northern Paiute Tales. Journal of American Folk-Lore 51(202:363-438.

Lowie, Robert H. 1924. Notes on Shoshonean Ethnography. American Museum of Natural History Anthropological Papers 20 (3):187-314.

NPS (National Park Service). 2009. Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines [As Amended and Annotated]. Electronic document, http://www.nps.gov/ history/local-law/arch_stnds_0.htm, accessed on March 19, 2009.

NPS and ACHP (National Park Service and the Advisory Council on Historic Preservation). 1998. The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to the National Historic Preservation Act. Published jointly by the National Park Service of the U.S. Department of the Interior and the Advisory Council on Historic Preservation.

Steward, Julian H. 1943. Some Western Shoshoni Myths. Anthropological Papers 31, Bureau of American Ethnology Bulletin 136:249-299.

1997 Basin-Plateau Aboriginal Sociopolitical Groups. Reprinted. University of Utah Press, Salt Lake City. Originally published in 1938, United States Government Printing Office, Washington, D.C.

Steward, Julian H., and Erminie Wheeler-Voegelin 1974 The Northern Paiute Indians. In Paiute Indians III, compiled and edited by David Agee Horr, pp. 9-328. Garland Publishing Inc., New York.

Stewart, Omer C. 1939. The Northern Paiute Bands. University of California Anthropological Records 2(3):127- 149. Berkeley.

1941 Culture Element Distributions: XIV, Northern Paiute. University of California Anthropological Records 4(3):361-446. Berkeley.

USDA NRCS 2016. Web Soil Survey. USDA Natural Resources Conservation Service, Soil Survey Staff. Accessed April 18, 2016. http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

Vanderburg, W. 0., 1936. Placer mining in Nevada: Nevada Bur. Mines Bull. 30, 178 p.

Washoe County 2012. Master Plan: Truckee Canyon Area Plan. Planning and Development Division Community Services Department. Washoe County, Nevada.

Weide, D.L. 1982. Paleoecological Models in the Southern Great Basin: Methods and Measurements. In Man and Environment in the Great Basin, pp. 8–26, edited by David B. Madsen and James F. O'Connell, Society for American Archaeology Papers 2, Washington D.C.

Wohlgemuth, Eric 1984. Archaeological investigations at CA-PLA-500, the Sailor Flat site, Placer County, California, Foresthill Ranger District, Tahoe National Forest

APPENDIX A (CONFIDENTIAL)

Predictive Modeling Maps

APPENDIX B (CONFIDENTIAL)

NVCRIS Records Search Maps and Information

APPENDIX C

Key Personnel Resumes

APPENDIX D (PENDING)

Nevada IMACS Forms for Newly Identified Resources

ATTACHMENT D5

Biological Resources Report

BIOLOGICAL TECHNICAL REPORT
for the
DODGE FLAT SOLAR ENERGY CENTER
WADSWORTH, WASHOE COUNTY, NEVADA

Prepared for:

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Prepared by:

DUDEK
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Encinitas, California 92024

JUNE 2017

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TABLES

1 INTRODUCTION

Dudek prepared this Biological Technical Report (BTR) on behalf of Dodge Flat Solar LLC. (Dodge Flat Solar LLC) to summarize the methodology of a literature review, vegetation mapping, jurisdictional delineation and bird utilization count surveys completed for special-status biological resources potentially present within the project boundary. Special-status biological resources include those listed as threatened or endangered by the federal Endangered Species Act, bird species protected by the Migratory Bird Treaty Act, jurisdictional areas as defined by the U.S. Army Corps of Engineers (ACOE) pursuant to Section 404 of the federal Clean Water Act and the Nevada Department of Wildlife (NDOW). This BTR provides the results of the field surveys, a summary of impacts to identified biological resources, and recommendations for minimizing impacts to biological resources.

For purposes of this BTR the project boundary includes all areas that have been considered for the development of renewable energy facilities and associated infrastructure as depicted on report figures. The project boundary includes the "proposed project" that will be constructed and operated on lands most suitable for development based on environmental constraints and final design engineering.

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2 REGULATORY SETTING

Federal Endangered Species Act

The federal Endangered Species Act (FESA) (16 U.S.C. 1533) gives joint authority to list a species as threatened or endangered to the Secretary of the Interior, represented by the U.S. Fish and Wildlife Service (USFWS), and the Secretary of Commerce, represented by the National Marine Fisheries Service (NMFS). Under FESA, the "take" of endangered or threatened fish, wildlife, or plants species or adverse modifications to critical habitat in areas under federal jurisdiction is prohibited. Under FESA, "take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The USFWS and NMFS have interpreted the definition of "harm" to include significant habitat modification that could result in the take of a species.

Either an incidental take permit under Section 10(a) or an incidental take statement under Section 7 is required if an activity would result in the take of a federally listed species. Section 7 consultation occurs when there is a federal nexus (e.g., U.S. Army Corps of Engineers, Federal Highway Administration) and benefits from requirements to maintain established schedules. Section 10(a) is used when there is no federal nexus and there are no established schedules to meet. Take that is incidental to the lawful operation of a project is permitted under Section 10(a) through approval of a habitat conservation plan, where a federal agency is not authorizing, funding, or carrying out the project.

USFWS and/or NMFS evaluates project impacts and proposed avoidance and minimization measures where a federally listed species is present and likely to be affected by an existing or proposed project. Consultation with the USFWS or NMFS is initiated by the lead agency under Section 7 or the private landowner under Section 10. Generally, terrestrial and freshwater fish species are under the jurisdiction of USFWS, while marine and anadromous fish species are under the jurisdiction of NMFS. Project authorization may involve a letter of concurrence that the project will not result in the take of a listed species, or a Biological Opinion that describes what measures must be undertaken to minimize the likelihood of an incidental take. Projects determined by USFWS and NMFS to jeopardize the continued existence of a species cannot be approved under a Biological Opinion.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.) regulates and prohibits taking, killing, possessing, harming, or trading in migratory birds. The MBTA addresses whole birds, parts of birds, and bird nests and eggs. This international treaty for the conservation and management of bird species that migrate through one or more countries is enforced in the United States by USFWS. This is typically applied to projects related to nesting activities and provision of acceptable buffers to avoid indirect impacts including "harm."

Clean Water Act

The objective of the Clean Water Act (CWA) is to restore and maintain the chemical, physical and biological integrity of waters of the United States (as defined 33 CFR 328.3[a]). Section 401 of the CWA (33 U.S.C. 1341) prohibits the discharge of any pollutant into waters of the United States. Project applicants for a federal license or permit to conduct activities including, but not limited to, the creation or operation of facilities, which may result in discharge into waters of the United States, must obtain certification that the project would not violate applicable effluent limitations and water quality standards. Section 404 of the CWA (33 U.S.C. 1344) requires a federal license or permit from the U.S. Army Corps of Engineers (ACOE) (ACOE and EPA 2008) prior to the discharge of dredge or fill material into waters of the United States, unless activity is exempt from Section 404 permit requirements. Permit applicants must demonstrate that they have attempted to avoid or minimize impacts on the resource; however, if no further minimization of impacts is possible, the applicant is required to mitigate remaining impacts on all federally regulated waters of the United States.

3 PROJECT SETTING

3.1 Project Location

The proposed Dodge Flat Solar Energy Center (project or proposed project) is located on approximately 1,632 acres, about 3.5 miles northwest of the town of Wadsworth in an unincorporated part of Washoe County, Nevada (Figure 1). More specifically, the proposed project is located north of Olinghouse Road and approximately 1.5 miles west of intersection with State Route 447.

The proposed project is located on the Wadsworth U.S. Geological Survey (USGS) 7.5-minute quadrangles, in Section 6 of Township 20 North, Range 24 East; Sections 30 and 31 or Township 21 North, Range 24 East; and Sections 24, 25, 26, and 36 of Township 21 North, Range 23 East; the center point latitude is 39°39′12.71″ N and the longitude is 119°20′22.96″ W (Figure 2).

3.2 Project Description

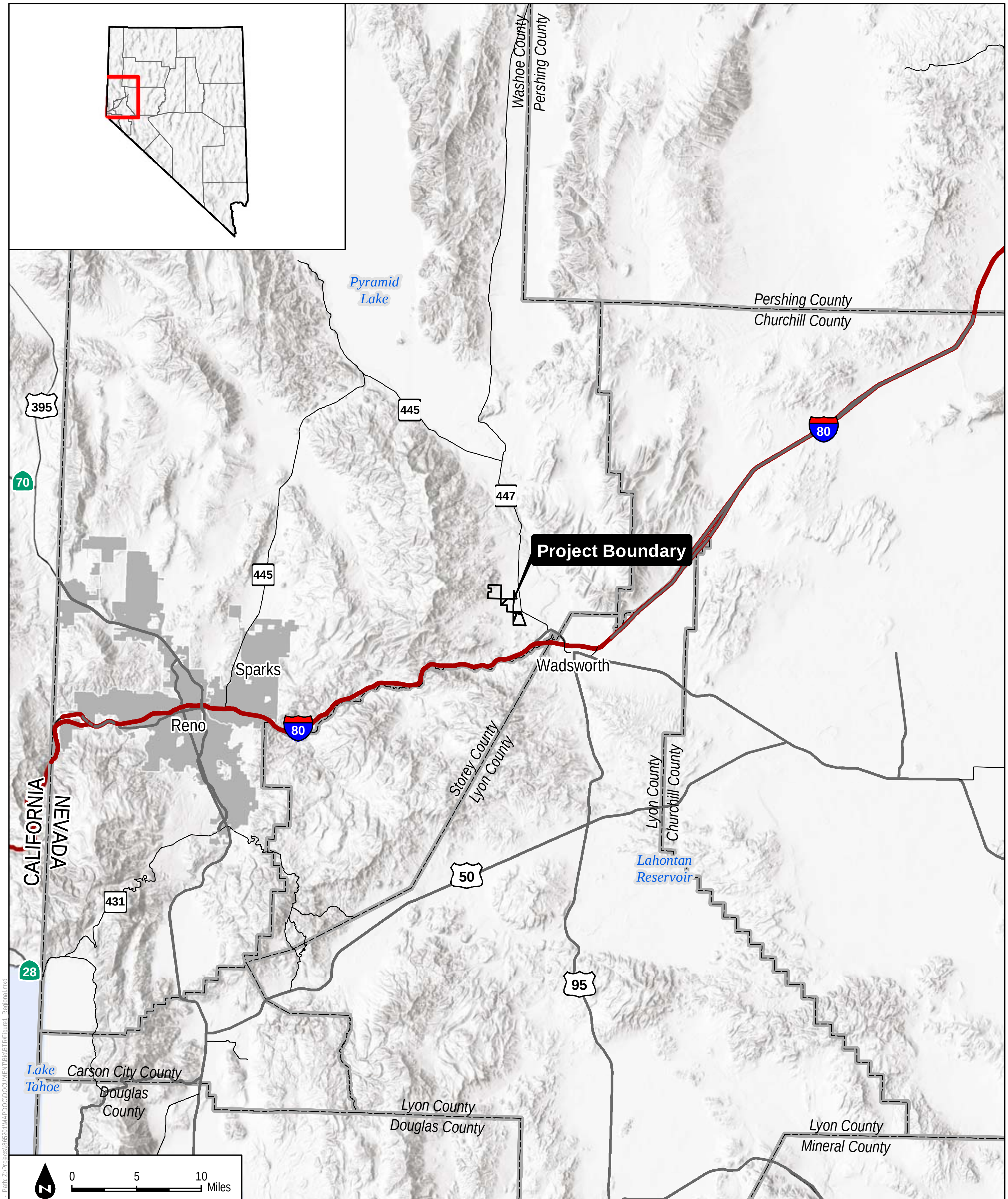
Dodge Flat Solar LLC, a subsidiary of NextEra Energy Resources, is considering the development of the proposed project which would include a 200 MW solar photovoltaic facility, a battery storage component, and associated infrastructure on approximately 1,632 acres of private land.

The proposed project is located on privately owned land but would include two permanent access roads within public lands managed by the Bureau of Land Management (BLM). The project would include solar development located on lands most suitable for development based on the engineering and environmental constraints evaluation completed during the permitting stage.

3.3 Land Uses

The north central portion of the project boundary has been historically disturbed by mining operations (see disturbed habitat mapped on Figure 3 below) and is currently primarily unvegetated or contains a low cover of non-native plant species. The mining activity included extensive modifications of the landscape. The activities included the construction of roads, ditches, channels, pits and berms to reroute water around the mine site or isolate it in bermed areas. Some of the modifications still exist in original condition at the what appears to be a “reclaimed” portion of the mining area (presumably the quarry and ore processing area) and some have been left in place and/or failed over time, resulting in a large portion of the north-central section of the project boundary draining into, and terminating at the bermed reclaimed mining area (bermed pits) that is shown as disturbed habitat area in Figure 3. The remaining areas within the project boundary are vacant and mostly undisturbed with a land cover of native vegetation. Disturbances within the project boundary include the previously mentioned historical mining activities and uses ancillary to the mining operations, dirt roads, berms, channels, pits and power lines as well as, small trash dumps, recreational off road vehicle dirt tracks and other signs of recent and ongoing human disturbance. One area in the northern section of the project boundary appears to have been revegetated as evidenced by differing vegetation composition and relic irrigation piping.

Surrounding lands include public lands managed by the BLM and lands within with Pyramid Lake Indian Reservation managed by the Pyramid lake Tribal Council (see Figure 2). All lands surrounding the project boundary are designated “Rural” within the Washoe County Master Plan (WCMP) (Washoe County 2012). In the Truckee Canyon Area Plan (TCAP), surrounding lands are currently assessed as “Undeveloped” (Public Lands), “Industrial” (Reservation), and other private lands include a mix of “Low Density Rural,” “Medium Density Suburban,” “Vacant-Minor Improvements Common Area,” and “Agricultural” (Washoe County 2012). In addition, gold mining has been noted in areas surrounding the project boundary within an area designated as having moderate potential for geothermal activities (Washoe County 2010).



SOURCE: ESRI Basemaps

FIGURE 1

Regional Map

Dodge Flat Solar Energy Center

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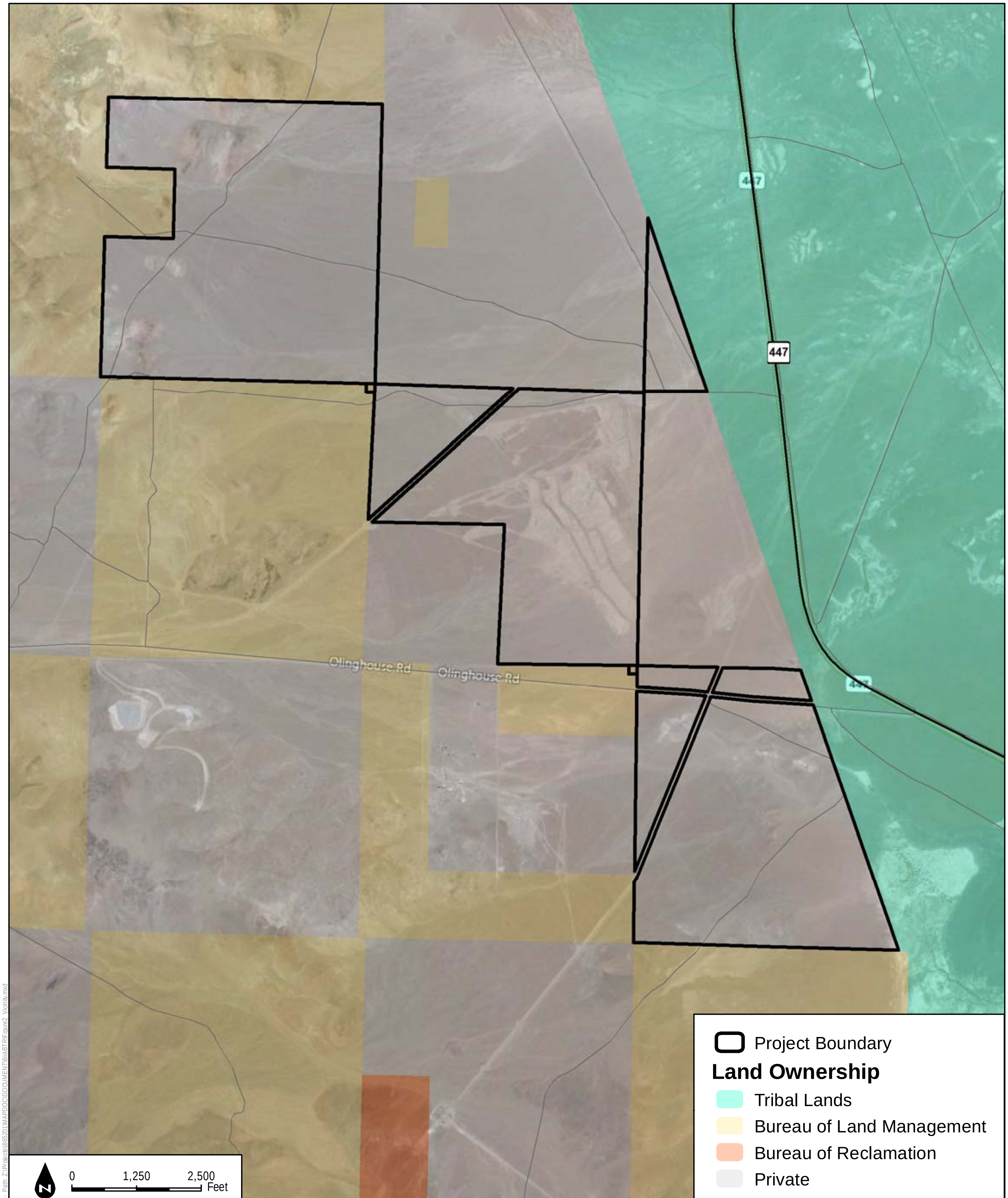

SOURCE: Bing 2017

FIGURE 2

Vicinity Map

Dodge Flat Solar Energy Center

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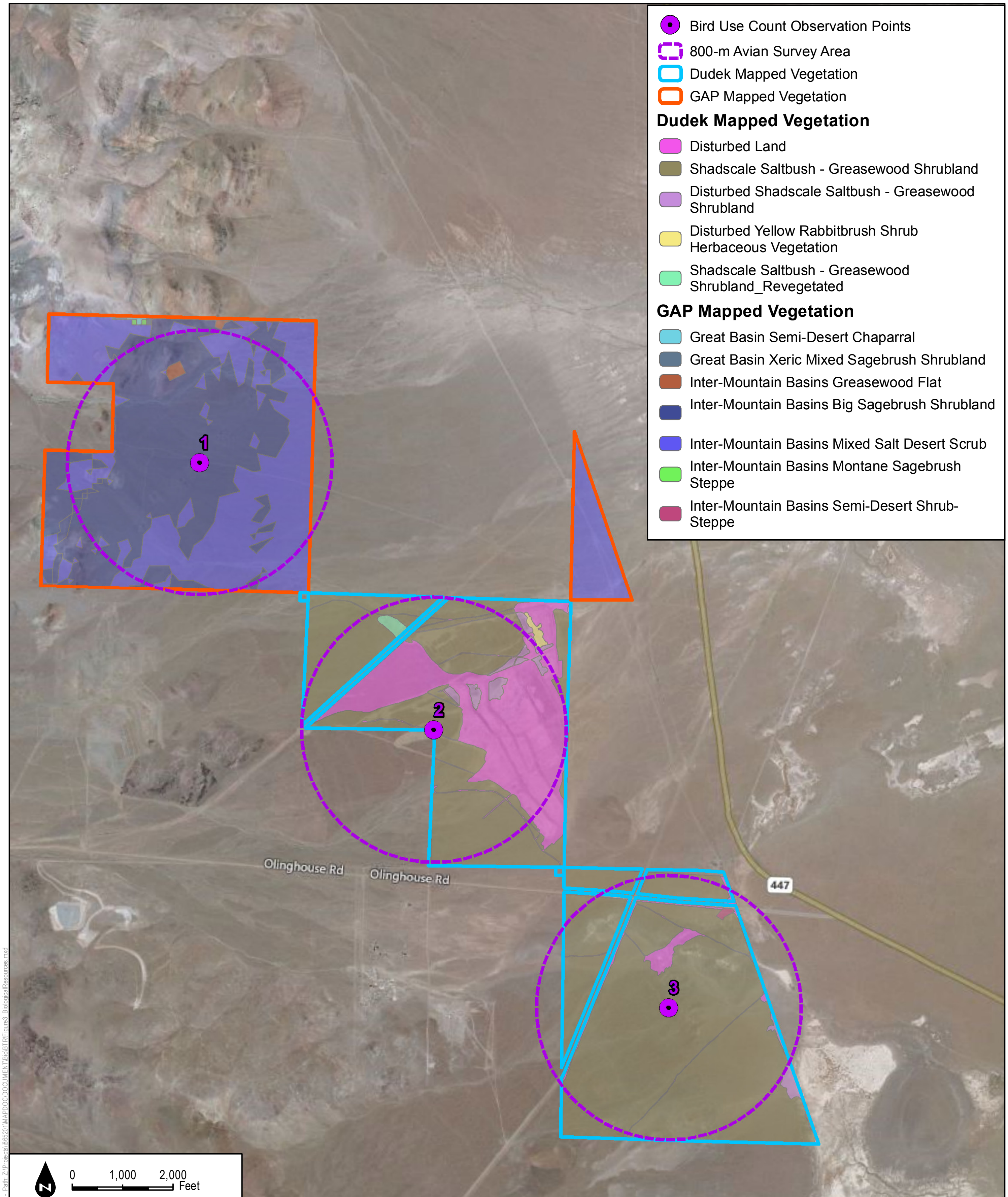

SOURCE: ESRI Basemaps; USGS NHD (2014)

FIGURE 3

Biological Resources

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Dodge Flat Solar Energy Center

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3.4 Soils

Soil mapping of project boundary is available from the USDA Natural Resources Conservation Service (NRCS) (USDA NRCS 2016a). The following soil types have been identified per NRCS mapping: Bango loamy sand, 0 to 2% slopes; Bango silt loam, 0 to 2% slopes; Juva silt loam, 2 to 4% slopes; Patna sand, 0 to 2% slopes; playas; and Trocken-biddleman-bluewing associated.

Bango loamy sand, 0 to 2% slopes. Bango series soils consist of very deep, well drained soils formed in alluvium (NRCS 2016). These soils are well-drained and are not considered hydric.

Juva silt loam, 2 to 4% slopes. Juva series soils are very deep soils formed from alluvium derived from mixed rocks. They are generally found on fan skirts, basin floor remnants, and alluvial fans (NRCS 2016). This soil is well-drained and is not considered hydric.

Mizel-Skedaddle-Rock outcrop association. This association is comprised of a combination of characteristics typical of the individual soil series. The Mizel series consist soils consist of very shallow, well drained soils formed in residuum from rhyolite (NRCS 2016). These soils are found primarily on hills with slopes of 15 to 50%. Skedaddle series soils consist of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from andesite and basalt. These soils are typically found on mountains, hills, and plateaus. This association also contains interspersed rock outcroppings. These soils are not considered hydric.

Patna sand, 0 to 2% slopes. Patna series soils are very deep soils formed in eolian sands over lacustrine deposits derived from mixed rocks. These soils are found on sand sheets and stable dunes on basin floor remnants (NRCS 2016). Patna series soils are somewhat excessively drained soils and are considered hydric.

Playas. Playa landforms are characterized by the usually dry, nearly level lake plain that occupies the lowest parts of closed depressions, such as those occurring on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation-runoff events. Soils found in playas are usually fine grained. Playas are considered hydric soils (NRCS 2016).

Singatse-Mizel-Stingdorn association. This association is comprised of a combination of characteristics typical of the individual soil series. All three series are comprised of very shallow to shallow soils that were formed in residuum and colluvium derived primarily from volcanic rocks, rhyolite, andesite, or tuff. These soils are generally found on hills and mountains. These soils are not considered hydric.

Trocken-Biddleman-Bluewing association. This association is comprised of a combination of characteristics typical of the individual soil series. The Trocken and Biddleman series consist of very deep, well drained soils derived from mixed rocks. Bluewing series soils consist of very deep, excessively drained soils formed in alluvium derived from mixed rock. All soils in this association are typically found on fan remnants, beach plains, beach terraces, lake terraces, alluvial fans, and inset fans (NRCS 2016). These soils are not considered hydric.

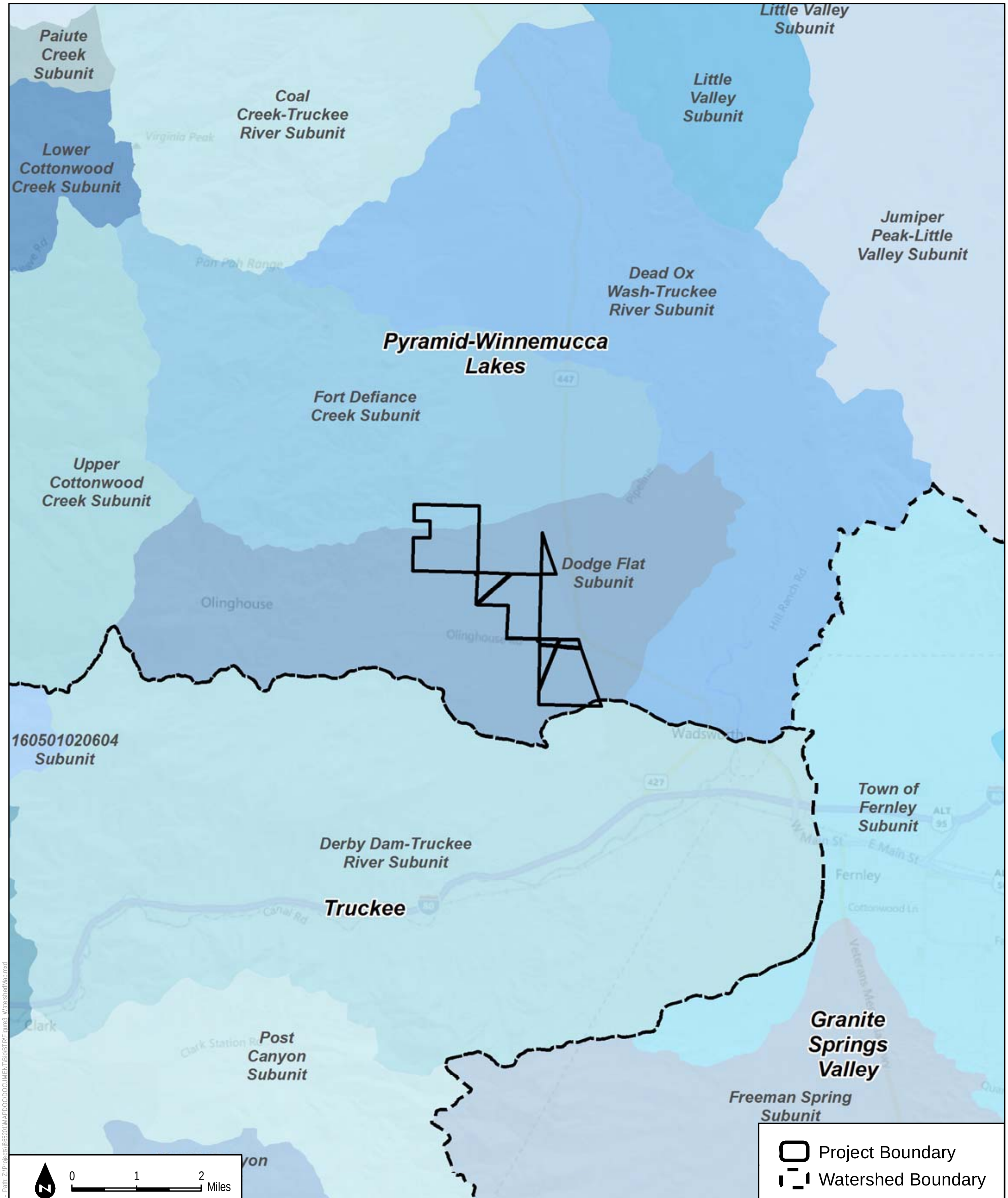
3.5 Topography

The project boundary is located within the Great Basin, east of the Sierra Nevada Mountains. The Pah Pah Range, a northwest-southeast mountain range, is located immediately west and the project boundary is located at the mouth of Olinghouse Canyon, Frank Free Canyon, and Tiger Canyon. Spanish Springs Peak, approximately 7,404 feet above mean sea level (amsl), is the tallest mountain peak within the vicinity and is approximately 13 miles west of the project boundary. Topography within the project boundary is generally flat with some topographic relief, gently sloping in a northwest direction. Elevations within the project boundary vary from 4,479 feet amsl at the western portion to 4,176 feet amsl in the eastern portion of the project boundary.

3.6 Watershed and Hydrology

The majority of the project boundary lies within the Pyramid-Winnemucca Lakes Watershed, a 1,370-square-mile watershed, specifically within the Dodge Flat Subunit. The southeast corner of the project boundary lies within the Truckee Watershed, a 1,190-square-mile watershed, specifically within the Derby Dam-Truckee River Subunit (Figure 4).

The project boundary is regionally located within the Truckee River Basin, a closed topographic basin that includes the Lake Tahoe watershed and headwater tributaries along the eastern slopes of the Sierra Nevada. All water that enters the region either infiltrates into the groundwater basin or sink areas that may include wetlands, lakes and playas. The closest perennial feature to the project boundary is the Truckee River, located approximately 3.4 miles to the east of the project boundary and approximately 1.7 miles from the southern portion of the project boundary. The Truckee River runs from Lake Tahoe approximately 120 miles to its terminus in Pyramid Lake.



SOURCE: ESRI Basemaps; USGS NHD (2014)

FIGURE 4

Watershed Map

Dodge Flat Solar Energy Center

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The project boundary is located on an alluvial fan at the southern terminus of Fossil Canyon. The main stem channel coming from Fossil Canyon splits into two channels at the mouth of the canyon, approximately 250 feet north of the northern project boundary. The eastern channel, Fossil Canyon Wash, continues southeast to Palm Canyon Wash and is outside the project boundary. A hill located along the northeastern project boundary separates Fossil Canyon Wash from the project boundary. The western main stem channel continues south along the western project boundary and terminates at the existing historic quarry and ore processing area. At the northern project boundary, a diversion berm exists that directs flows away from the reclaimed quarry to the southeast. Some of these berms have failed and flow from these failed areas enter and terminate within the bermed quarry. Distributary channels occur throughout the project boundary and flow south from Fossil Canyon Wash, continue south across the project boundary in a southerly direction, and terminate in the existing quarry. Five ephemeral compound channels flow through the project boundary generally from the southwest to the northeast, through culverts under Highway 447, and continue east to the Truckee River as it flows north to Pyramid Lake.

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4 METHODS

4.1 Literature Review and Agency Outreach

Prior to conducting fieldwork, the following available resources were reviewed to assess the potential for jurisdictional features: a 1:200-scale aerial photograph (Bing Maps 2014; Google Earth 2014), the USGS 7.5-minute topographic quadrangle (USGS 2014), USDA Natural Resources Conservation Service (NRCS) digital general soil association map GIS layer (USDA NRCS 1994), EPA Water Program Features (EPA 2014), Geologic Map of the Wadsworth Quadrangle, Washoe County Nevada (Bell et. al. 2005), Historical Weather for Wadsworth, Nevada (Weatherbase 2014), National Hydrography Dataset (USGS 2014), NDOW Wildlife Occurrences (Appendix C), USFWS Information for Planning and Consultation online tool (IPaC) and the National Wetland Inventory (USFWS 2014). Additional documents reviewed include the Critical Analysis for the Dodge Flat Solar Energy Project (Dudek 2014b), Washoe County Master Plan (Washoe County 2010), and Master Plan Truckee Canyon Area Plan (Washoe County 2012).

Dodge Flat Solar LLC has been coordinating closely with the NDOW and USFWS regarding biological resources that may be present in the project boundary and associated survey methods that would be appropriate for the proposed project. To date two meetings (December 15, 2014 and October 4, 2016) have been held with the Wildlife Agencies (NDOW & USFWS) along with multiple calls to discuss sensitive species that may have a potential to occur and associated surveys that may be required. Per discussions with the Wildlife Agencies it was determined that no special-status species surveys would be required for the project. The Wildlife Agencies recommended that surveys be performed to determine the amount of avian activity in the area via use of Bird Utilization Count's (BUC's). The results of those surveys are provided below in Section 4.4.

4.2 Vegetation Community and Land Cover Mapping

Vegetation mapping was conducted by Dudek in 2014 over the two southern parcels in accordance with the *International Vegetation Classification Alliances and Association Occurring in Nevada with Proposed Additions* (Peterson 2008) where feasible, and follow *National Vegetation Classification System* developed by the Nature Conservancy (Grossman et al. 1998) to accommodate the lack of conformity of the observed communities. Land cover types not included within Peterson (2008) were mapped based on project boundary characteristics that existed during the field survey.

Vegetation communities mapped in the field were mapped directly onto a 200-foot-scale (1 inch = 200 feet), aerial photograph–based field map of the project boundary. Following completion of the fieldwork, all vegetation polygons were digitized using ArcGIS and a GIS coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present within the project boundary was determined. Figure 3 shows the vegetation communities and land cover types mapped within the project boundary.

For areas not mapped by Dudek, including the entire northern parcel which was added on after the field work was conducted, the USGS GAP Land Cover Data Set (2011) in addition to field notes and aerial photography interpretation was used to verify the vegetation. The data set uses the Ecological System classification system developed by NatureServe (2015) to represent vegetation communities and land covers.

4.3 Jurisdictional Determination

A delineation of jurisdictional waters was conducted within the project boundary by Dudek biologists Kevin Derby, John Spranza, Vipul Joshi, Britney Strittmater and Laura Burris on July 13 and 14, 2014, December 18 and 19, 2015, July 17 and 18, 2016 and June 8 and 9, 2017 (Dudek 2017). The project boundary was surveyed for Waters of the United States, including wetlands, under the jurisdiction of ACOE, pursuant to Section 404 of the federal Clean Water Act (Appendix D).

The delineation of potential wetland waters of the United States was based on methodology described in the 1987 *Corps of Engineers Wetlands Delineation Manual* (ACOE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (ACOE 2008a).

Non-wetland waters of the United States were delineated based on the presence of an Ordinary High Water Mark (OHWM) as determined utilizing the above methodology in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (ACOE 2008b) using the additional methods described in *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (ACOE 2010.)

Vegetation, hydrology, soils, and evidence of the presence of an OHWM were examined in accordance with ACOE requirements within the project boundary to confirm whether the indicators were present and the boundaries of potentially jurisdictional features were being mapped accurately.

Characteristics of the low flow channel, low terrace, and active floodplain were noted. A Trimble GeoXT Global Positioning System (GPS) unit was used to mark the locations of low flow channels and the associated active floodplains. Where the boundary was clear, the transition was walked upstream/downstream and the longitudinal boundary was mapped with the GPS unit. After collection of field data, geographic information system (GIS) software ArcMap 10.0 was used to overlay the GPS data on an aerial photograph and the 2-foot interval topographic map. The field data, aerial photograph, and topography were assessed collectively to determine the active floodplain and the boundary of jurisdictional waters.

The delineation methodology and the compound channel features are described in more detail below.

Low Terrace

Low terraces were mapped based on the identifiable lack of OHWM indicators. Low terraces contained a higher cover of vegetation. Soils were compact with a high percentage of large rocks and cobbles. Rock varnish was also present within the low terraces, with a darker surface color/tone present. The low terraces exhibited surface relief relative to the active floodplain and low-flow channel. Low terrace features are not considered jurisdictional waters or streambeds.

Active Floodplain

The active floodplain was delineated based on OHWM indicators including textural change from larger rock/cobbles to finer-grained sand. There were only minor vegetation changes between the active floodplain and low terraces. The active floodplain was generally mapped at the top of the defined banks of the compound channels, as that was where the vegetation maturity and soil characteristics indicated the abrupt start of the low terrace.

Low-Flow Channel

Low-flow channels were delineated based on defined beds, finer sediment deposition, and absence of vegetation cover. Shelving adjacent to the low flow channel was also observed.

Features that were previously mapped as potentially jurisdictional by Dudek in 2014 were also visually re-surveyed to determine if they persisted during the dry season and showed any new characteristics that could modify potential jurisdiction. Any features that did not persist through the dry season were revised to indicate the new size and location of the feature using the methods described above.

4.4 Bird Utilization Counts

This area of the Great Basin is part of the Pacific flyway or migration route, and there are a number of wetland resources present within the vicinity (e.g., within 20 to 50 miles) which might attract local movement. However many landscape features may enhance or detract from an area's attractiveness to migrating birds, including topography, direction of topographic features, general wind conditions, forage opportunities, relationship to attractive sites (e.g., lakes, ponds, rivers), and many other factors. Hence the need for project-specific studies typically conducted to determine the level of usage. In this case, due to the proximity of Pyramid Lake and wetlands and riparian areas associated with the Truckee River, the wildlife agencies considered the potential issue of birds migrating between important wetland areas in the region. Therefore, a use count study was conducted to identify the potential for this issue to occur.

There are currently no formal guidelines or recommendations for avian surveys at solar farms, so the study design used here was based on widely accepted methods developed for wind farms. There are a variety of methods for determining bird use of an area related to wind farms, both before the project is implemented to estimate risk to species, and after to verify actual impact to species. These include various state and federal suggestions related to eagles, birds, and bats, but all relate to wind farms. The goal of this effort was to provide general information which might be useful within the context of any future adopted plans. This would be accomplished by employing typical point count methods.

The Bird Use Count (BUC) Survey technique (CEC and CDFG 2007) was selected to study the proposed project in coordination with NDOW. This is a modified point-count survey method utilized to obtain a baseline index of bird use within the area. This data provides information on the species and relative occurrence of individuals anticipated to use the area during peak migration periods. Using this information, relative importance of activity within the project boundary may be determined. For the purposes of this project, the BUC surveys were conducted for 10 weeks during the fall migration period (October through December, 2016) and focused on large birds (e.g., raptors, eagles) and wetland species (e.g., pelicans, loons, grebes, herons, ducks).

Observation points (OP's) were established at vantage points which provide an unobstructed view of the surrounding area (Figure 3). The OPs were established such that all portions of the proposed project were visible. The number of OP's needed was determined by having between 1 to 1.5 points per square mile, which is consistent with CEC and CDFW methods. Based on this, three OP's were established to view the entire area within the project boundary.

During BUC surveys, the biologist surveyed from each OP for 2 hours and recorded focal species detected in all directions and at all distances. Focal Species include all eagles, raptors, pelicans, loons, herons, grebes, ducks or special status bird species. Although detections at all distances were recorded, an emphasis was placed on detecting all eagles that pass within 0.5 mile (800 meters) of the OP, hereafter referred to as the "avian survey area."

Surveys were rotated to cover morning and afternoon time periods and occurred during all types of weather conditions, including calm, windy, dry, rainy, hot, and cold. At the start and end of each survey, and every hour between, the biologist recorded meteorological data including temperature, wind speed and direction, precipitation, cloud cover, and visibility. BUC surveys were conducted when visibility was sufficient to permit identification of large birds 800 meters away.

The following was recorded for all focal species initially detected inside or outside of the avian survey area: date and time of detection; species; target distance and direction from OP in meters/degrees (when detected); target height above ground level (agl) in meters (rough; when detected); detection Mode (naked eye, binoculars, spotting scope, other); initial flight direction; passage direction; and number of individuals (if moving in a group).

In addition to the above, the following was recorded for all focal species that passed within the avian survey area, with regard only to the portion of the observation occurring within the survey area: minimum and maximum height (agl) in meters; flight types exhibited (e.g., dive, hover, soar); and number of minutes the bird spends flying or perching within the survey area.

Using rangefinders and landmarks, the biologist was trained in estimating distances across the range expected for these surveys. The biologist used a Bushnell rangefinder, Ziess Diascope 85mm spotting scope, and 10x42 binoculars while conducting surveys to measure the distances to various landmarks around each station and use the landmarks accordingly in distance estimates.

4.5 Plants and Wildlife

All plant species encountered during the field surveys described above in Sections 4.2 and 4.3 were identified and recorded. Latin names for plant species follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2016), and common names follow the United States Department of Agriculture’s Natural Resources Conservation Service PLANTS Database (USDA 2016b).

All wildlife species, detected during field surveys performed as described above in Sections 4.2, 4.3 and 4.4 by sight, calls, tracks, scat, or other signs, were identified and recorded. In addition to species actually observed, expected wildlife usage within the project boundary was determined according to known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. No trapping or focused surveys for special-status or nocturnal species were conducted. Latin and common names for wildlife species referred to in this BTR follow Crother (2012) for amphibians and reptiles, Wilson and Reeder (2005) for mammals, and the American Ornithologists’ Union’s Checklist of North and Middle American Birds (AOU 2015) for birds.

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5 RESULTS

5.1 Vegetation Communities, and Land Covers

The project boundary contains 12 vegetation communities and land covers as presented in Table 1. Of the 12 vegetation communities and land covers, five (disturbed land, shadscale saltbush-greasewood shrubland (including disturbed and revegetated), and disturbed yellow rabbitbrush shrub herbaceous vegetation) were verified in the field by Dudek and the remaining seven were mapped by the USGS GAP Land Cover Data Set using the NatureServe classification system (see Figure 3).

Table 1
Vegetation Communities and Land Cover Types in the Project Boundary

Vegetation Communities/Land Cover Types	Acreage
Disturbed Land	198.82
Great Basin Semi-Desert Chaparral	0.61
Great Basin Xeric Mixed Sagebrush Shrubland	0.66
Inter-Mountain Basins Big Sagebrush Shrubland	329.68
Inter-Mountain Basins Greasewood Flat	2.73
Inter-Mountain Basins Mixed Salt Desert Scrub	325.00
Inter-Mountain Basins Montane Sagebrush Steppe	0.44
Inter-Mountain Basins Semi-Desert Shrub-Steppe	7.00
Shadscale Saltbush - Greasewood Shrubland	743.55
Shadscale Saltbush - Greasewood Shrubland (disturbed)	18.21
Shadscale Saltbush - Greasewood Shrubland (revegetated)	3.50
Yellow Rabbitbrush Shrub Herbaceous Vegetation (disturbed)	2.41
Total	**1,632.61**

During the jurisdictional delineation field surveys (see section 4.3), soils were observed to have a loamy to sandy base with desert pavement or cryptogamic crusts of metavolcanic rocks ranging from pea sized to fist sized and a few scattered 3-foot diameter boulders. There were no visible differences between the soils listed by the USDA NRCS (1994) and those that were within the areas disturbed by the mining activities. No obvious tailing piles were present.

5.2 Jurisdictional Features

Based on the results of the jurisdictional delineation, the project boundary does not support hydrophytic vegetation or hydric soils; therefore, no jurisdictional wetlands with all three parameters occur within the project boundary. The project boundary is located on an alluvial material, with compound ephemeral drainages that meander and connect to the Truckee River.

Twelve jurisdictional distributary channels cross the project boundary, and numerous other isolated ephemeral channels with no connection to the Truckee River cross portions of the project boundary and either lose OHWM indicators or enter the reclaimed mining area and disappear. Aerial photographs indicate that the mining and ore processing impacts occurred prior to 1993 (earliest aerial photos reviewed); therefore, the anthropogenic disturbance, soils and hydrologic features associated with the former mining operation are considered to be new normal circumstances in the project boundary.

The project boundary does not support Traditional Navigable Waters, interstate waters, or waters that support interstate commerce (CFR 328.3(a) parts 1–4); therefore, ACOE jurisdiction was potentially present based on connectivity to a waters of the United States (CFR 328.3(a) part 5). A Jurisdictional Delineation Report submitted by Dudek in June 2017 is being reviewed by the ACOE which includes potential jurisdictional waters of the United States within the project boundary.

The potentially jurisdictional ephemeral drainages within the project boundary connect to the Truckee River, located just east of the project boundary; the Truckee River originates in California in Tahoe City and flows to Pyramid Lake in Nevada. The Truckee River is an interstate coldwater perennial river that significantly affects the physical, chemical, and biological properties of Pyramid Lake, and is therefore a non-wetland waters of the United States under the jurisdiction of ACOE. Also, its flows originate in Lake Tahoe, a navigable water that supports interstate commerce between California and Nevada.

The drainages mapped as “isolated ephemeral drainages” (IED) either lack indicators of an OHWM before they connect to a waters of the United States or they reach the reclaimed mining area and then lose channel morphology and merge with the upland topography. Although subject to final verification by the ACOE, these isolated waters are presumed not jurisdictional pursuant to Section 404 of the CWA.

5.3 Bird Utilization Count

Dudek performed BUCs from 3 OPs (see Figure 3) for a total of 60 survey hours. At the start and end of each survey, and every hour between, the biologist recorded meteorological data including temperature, wind speed and direction, precipitation, cloud cover, and visibility. Table 2 summarizes the survey conditions.

Table 2
Bird Utilization Count Survey Conditions

Date	Hours	Personnel	Bird Use Count Location	Conditions
2016-10-02	09:20–11:20	John Silva	BUC 2	60–67° F; 10% cc; 6–10 mph wind, gusts to 15–20 mph
2016-10-02	12:03–14:03	John Silva	BUC 3	65–66° F; 10–20% cc; 12–19 mph wind
2016-10-02	15:00–17:00	John Silva	BUC 1	67–68° F; 40–50% cc; 12–19 mph wind
2016-10-09	09:22–07:22	John Silva	BUC 3	52–58° F; 0% cc; 1–5 mph wind
2016-10-09	09:54–11:54	John Silva	BUC 1	65–68° F; 0% cc; 1–10 mph wind
2016-10-09	12:16–14:16	John Silva	BUC 2	70° F; 0% cc; 6–10 mph wind
2016-10-11	06:32–08:32	John Silva	BUC 2	48–50° F; 70% cc; 1–5 mph wind
2016-10-11	08:54–10:54	John Silva	BUC 1	50–55° F; 70% cc; 1–5 mph wind
2016-10-11	11:27–13:27	John Silva	BUC 3	56–59° F; 70% cc; 6–10 mph wind
2016-10-23	07:25–21:25	John Silva	BUC 3	49–50° F; 50% cc; 1–5 mph wind
2016-10-23	12:13–14:13	John Silva	BUC 1	56° F; 40% cc; 6–10 mph wind
2016-10-23	09:55–11:55	John Silva	BUC 2	56° F; 50% cc; 6–10 mph wind
2016-10-30	07:25–09:25	John Silva	BUC 1	48° F; 100% cc; 6–10 mph wind; light intermittent rain
2016-10-30	09:50–11:50	John Silva	BUC 2	48° F; 90–100% cc; 6–10 mph wind; light intermittent rain
2016-10-30	12:20–14:20	John Silva	BUC 3	50–52° F; 70% cc; 6–10 mph wind; light intermittent rain
2016-11-06	09:02–11:02	John Silva	BUC 3	58–60° F; 100% cc; 1–5 mph wind
2016-11-06	11:24–13:24	John Silva	BUC 2	61–64° F; 100% cc; 1–10 mph wind
2016-11-06	14:00–16:00	John Silva	BUC 1	66–68° F; 90% cc; 6–10 mph wind
2016-11-13	08:25–10:25	John Silva	BUC 1	53–55° F; 20% cc; 1–10 mph wind
2016-11-13	10:51–12:51	John Silva	BUC 3	57° F; 20% cc; 6–10 mph wind
2016-11-13	13:10–15:10	John Silva	BUC 2	61° F; 30% cc; 6–10 mph wind
2016-11-23	11:52–13:52	John Silva	BUC 3	48–50° F; 40–50% cc; 1–5 mph wind
2016-11-23	09:30–11:30	John Silva	BUC 2	48–50° F; 50% cc; 1–5 mph wind
2016-11-23	14:23–16:23	John Silva	BUC 1	51–52° F; 40% cc; 1–5 mph wind
2016-11-27	08:42–10:42	John Silva	BUC 2	32–36° F; 40–50% cc; 6–10 mph wind
2016-11-27	11:06–13:06	John Silva	BUC 3	41° F; 30% cc; 6–10 mph wind
2016-11-27	14:31–16:31	John Silva	BUC 1	43° F; 20% cc; 6–10 mph wind
2016-12-04	07:40–09:40	John Silva	BUC 1	40–46° F; 80–90% cc; 1–5 mph wind
2016-12-04	13:18–15:18	John Silva	BUC 3	45° F; 80% cc; 1–5 mph wind
2016-12-04	09:58–11:58	John Silva	BUC 2	48° F; 90% cc; 1–5 mph wind

Six focal species (e.g., raptors, eagles) and one non-target species (common raven) were observed during the surveys. No wetland species (e.g., pelicans, loons, grebes, herons, ducks) were observed during any of the surveys. Table 3 summarizes the BUC survey observations.

Table 3
Bird Utilization Count Survey Results

Date	Species	Number of Individuals[1]	Time of Observation	Duration in Avian Survey Area	Behavior	Dominant Distance (meters)	Dominant Direction of Observation (degrees)
BUC 1							
2016-10-09	Northern Harrier (*Circus cyaneus*)	1	10:17	00:45	Flying: Contour hunting at 85°	500	90
2016-10-23	Common Raven (*Corvus corax*)	1	13:02	Not Recorded			
2016-10-23	Common Raven (*Corvus corax*)	1	13:18	Not Recorded			
2016-10-23	Golden Eagle (*Aquila chrysaetos*)	1	Not Recorded	01:15	Flying: Flapping at 90°	200	45
2016-11-06	American Kestrel (*Falco sparverius*)	1	15:28	00:03	Perched on Power/com pole 10 meters high	300	290
2016-11-06	Northern Harrier (*Circus cyaneus*)	1 male	15:22	01:30	Flying: Contour hunting at 180°	100	0
2016-11-27	Golden Eagle (*Aquila chrysaetos*)	1	Not Recorded	00:25	Flying: Soaring	160	95
2016-12-04	Ferruginous Hawk (*Buteo regalis*)	1 juvenile	08:35	00:15	Flying: Flapping	500	50
2016-12-04	Red-tailed Hawk (*Buteo jamaicensis*)	1	09:14	00:40	Flying: Flapping at 180°	100	90
BUC 2							
2016-11-06	Common Raven (*Corvus corax*)	1	12:31	Not Recorded			
2016-11-06	Common Raven (*Corvus corax*)	5	Not Recorded	West of BUC 2	Roosting on rocky mound	1500	Not Recorded
2016-11-06	Golden Eagle (*Aquila chrysaetos*)	2	12:15	One individual flew over BUC 3	Flying: Soaring	2,000	270

Table 3
Bird Utilization Count Survey Results

Date	Species	Number of Individuals[1]	Time of Observation	Duration in Avian Survey Area	Behavior	Dominant Distance (meters)	Dominant Direction of Observation (degrees)
2016-11-06	Northern Harrier (*Circus cyaneus*)	1	12:16	01:54	Flying: Contour hunting at 90°	500	180
2016-11-27	Red-tailed Hawk (*Buteo jamaicensis*)	1	08:49	Not Recorded	Perched on Power/com pole 8 meters high	400	15
BUC 3							
2016-11-13	Prairie Falcon (*Falco mexicanus*)	1	23:19	Perched for 5 min. Left and returned 6 min. Later. Stayed perched for 20 min. Then departed.	Perched on Power/com pole 30 meters high	200	222
2016-11-27	American Kestrel (*Falco sparverius*)	1	12:27	00:35	Flying: Fast flying, not hunting, at 245°	100	45

1 Number may or may not represent unique individuals as they may be the same individual flying back over the project boundary.

5.4 Plant and Wildlife Diversity

A total of 15 plant species were observed during field surveys, including 4 non-native and 11 native species. Appendix A contains a complete list of plant species observed within the project boundary during the survey.

One reptile species, common side-blotch lizard (*Uta stanburiana*), one mammal species, mule deer (*Odocoileus hemionus*), and one invertebrate, cabbage white (*Pieris rapae*), were detected during the initial reconnaissance survey performed in 2014. A total of twenty bird species were detected during the BUCs described above in Section 5.3 . No aquatic habitat was observed within the project boundary; therefore, no aquatic or semi-aquatic species are expected to occur within the project boundary. Appendix B contains a complete list of wildlife species observed within the project boundary during the survey.

5.5 Special-Status/Regulated Resources

Wildlife species potentially present within the project boundary that have special designations due to declining, limited, or threatened populations are discussed below.

Sources used for determination of special-status biological resources are as follows:

- USFWS Species Occurrence Data for federally listed threatened and endangered animal species (USFWS 2016)
- USFWS Information for Planning and Consultation online tool (IPaC)
- Species of Conservation Priority and/or target species as identified by the Nevada Wildlife Action Plan

5.5.1 Special-Status Wildlife Species

NDOW has outlined species known or potentially occurring in the vicinity (4-mile buffer) of the project boundary. Special-status species known to occur in the area include greater sage grouse (*Centrocercus urophasianus*), mule deer, bighorn sheep (*Ovis canadensis*), and pronghorn antelope (*Antilocapra americana*). Of these, only greater sage grouse has special-status due to conservation needs; the other three species are included because they are game species. Mule deer was the only species observed within the project boundary. Appendix C presents the special-status wildlife species known to have potential to occur within the project vicinity (4-mile buffer around the project boundary).

Greater Sage Grouse – Greater sage grouse is the largest member of the grouse family and occurs within parts of 11 states. It is the subject of multi-state conservation and land management efforts intended to stabilize and augment the population. In 2015, the USFWS determined that the greater sage grouse did not warrant listing. The non-migratory species occurs in mixed open and sage scrub lands which include a mix of scrub and grasses. The best nesting habitat includes more sagebrush canopy and lateral cover and grass cover over 8 inches in height.

Discussions with NDOW and the USFWS determined that populations were known to occur to the north and west, but not within the project boundary. It was observed by NDOW biologists that the project boundary did not appear to support good habitat quality for the species and their presence there had low potential. This was supported by the NDOW report (Appendix C) which stated that the "…habitat in the vicinity of the project area is generally categorized as Low Value Habitat/Transitional Range." Further, habitat assessment maps (Appendix C) only show Low Value Habitat/Transitional Range across a small portion of the southern 1/8th of the project boundary. The remainder of the project boundary has no designation.

Big Game Species – Big game species such as pronghorn antelope and mule deer are anticipated to occur in the project vicinity (4-mile buffer around the project boundary). Discussions with NDOW indicated that the species may occur; however, their only concern was allowing for movement of these species around and through the project area.

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6 PROJECT IMPACTS

6.1 Definition of Impacts

Permanent direct impacts typically refer to 100% permanent loss of a biological resource. These impacts refer to the area where vegetation clearing, grubbing, and mass grading would occur (the “project footprint”). Wherever existing vegetation or land cover would be permanently affected is considered to be a permanent direct impact.

Direct temporary impacts typically refer to short-term removal of a biological resource where the resource is expected to fully recover its function upon completion of a project. Areas subject to temporary disturbance may include slope remediation sites, construction access roads, staging areas, stockpiles, mowed areas, and dredging areas. Such sites would not have permanent structures.

Indirect impacts are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct construction disturbance zone. Indirect impacts may affect areas within the defined project site but outside the construction disturbance zone, including open space and areas outside of a project site, such as downstream effects. Indirect impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to development of open space areas (i.e., development-related long-term effects). In most cases, indirect effects are not quantified, but in some cases, quantification might be included, such as total dissolved solids released to downstream areas or using a noise contour to quantify indirect impacts to nesting birds.

6.2 Impacts to Vegetation Communities and Land Covers

The project design is in the process of being finalized and will be subject to final engineering and associated regulatory requirements of Washoe County. At this time the project footprint is anticipated to impact approximately seventy percent of the vegetation communities within the project boundary. As noted previously in Section 3.3, previous mining activities and ore processing impacts have resulted in a disturbed habitat to approximately 20% of the project area. The disturbed areas associated previous mining activities are shown in Figure 4 and classified below in Table 4 as disturbed lands.

Table 4
Estimated Impacts to Vegetation Communities and Land Cover Types

Vegetation Communities/Land Cover Types	Project Boundary Acreage	70% Estimated Acres Impacted
Disturbed Land	198.82	139.17
Great Basin Semi-Desert Chaparral	0.61	0.43
Great Basin Xeric Mixed Sagebrush Shrubland	0.66	0.46
Inter-Mountain Basins Big Sagebrush Shrubland	329.68	230.78

Table 4
Estimated Impacts to Vegetation Communities and Land Cover Types

Vegetation Communities/Land Cover Types	Project Boundary Acreage	70% Estimated Acres Impacted
Inter-Mountain Basins Greasewood Flat	2.73	1.91
Inter-Mountain Basins Mixed Salt Desert Scrub	325.00	227.50
Inter-Mountain Basins Montane Sagebrush Steppe	0.44	0.31
Inter-Mountain Basins Semi-Desert Shrub-Steppe	7.00	4.90
Shadscale Saltbush - Greasewood Shrubland	743.55	520.49
Shadscale Saltbush - Greasewood Shrubland (disturbed)	18.21	12.75
Shadscale Saltbush - Greasewood Shrubland (revegetated)	3.50	2.45
Yellow Rabbitbrush Shrub Herbaceous Vegetation (disturbed)	2.41	1.69
Total	**1,632.61**	**1,142.83**

Due to the location of the proposed project in an undeveloped open space area, long-term indirect impacts to vegetation communities are anticipated. During construction of the project, indirect effects may include dust, which could disrupt plant vitality in the short term, or construction-related soil erosion and runoff. Long-term edge effects could include intrusions by humans, and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to pollutants (fertilizers, pesticides, herbicides, and other hazardous materials), soil erosion, litter, fire, and hydrologic changes (e.g., surface and groundwater level and quality).

Both direct and indirect impacts to vegetation are considered minimal relative to the available habitat in the region and lack of unique vegetation communities. Additionally, project design features will help reduce impacts further.

6.3 Impacts to Jurisdictional Waters

Permanent direct impacts could result to potentially jurisdictional drainages depending on final engineering, as a result of implementation of the proposed project.

Indirect impacts to potentially jurisdictional resources are typically affected in the short-term by dust, invasive plant species, and increased human presence and in the long-term by changes in the velocity of runoff during and following construction, which could adversely affect the integrity of downstream resources causing erosion and sedimentation.

Potentially jurisdictional drainages are small and relatively far from any traditional navigable waters; limiting their biological, chemical, or physical value within the watershed. Additionally, through incorporation of project design features, short- and long-term indirect impacts to off-site, adjacent jurisdictional waters and wetlands would be reduced.

6.4 Impacts to Wildlife Species

Six target species (e.g., raptors, eagles) and one non-target species (common raven) were observed during the BUC surveys. No wetland species (e.g., pelicans, loons, grebes, herons, ducks) were observed during any of the surveys. Additionally, there are a number of NDOW "protected" species that have been documented within the vicinity (4-mile buffer) of the proposed project, as stated in Appendix C, which could potentially be affected by project implementation.

Because the location is situated in the Lahontan Valley in the regional vicinity of Pyramid Lake, Stillwater National Wildlife Refuge, Truckee River, and known rookeries for pelicans, cormorants, and ibis, NDOW has expressed concern about possible "pseudo lake effects" on wetland species that run on water in order to take off. This includes species such as grebes, cormorants, loons, and diving ducks, and possibly others. There is little known about the effects of solar farms on these and other avian species, but anecdotal and initial information from other facilities indicates that there is some direct impact to species, thought the extent is not thought to be very great. Particularly when considering existing mortality due to hunting and other anthropogenic activities. While not anticipated to be an important source of impact to these species, project design features will help to avoid and minimize any impacts that may occur.

Most of the indirect impacts to vegetation communities previously described can also affect wildlife. Wildlife may also be indirectly affected in the short-term and long-term by construction-related noise—which can disrupt normal activities and subject wildlife to higher predation risks—and adverse edge effects can cause degradation of habitat quality through the invasion of pest species. Breeding birds can be affected by short-term construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities. There is suitable habitat within the project area that could provide nesting habitat for raptors and songbirds protected by the MBTA. Indirect impacts from construction-related noise may occur to breeding wildlife if construction occurs during the breeding season (i.e., February 1 through September 15). While impacts to wildlife are expected to be relatively low project design features will help to avoid and minimize any impacts that may occur.

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7 PROJECT DESIGN FEATURES

Implementation of the proposed project would potentially result in impacts to vegetation communities, wildlife, and jurisdictional resources. While the proposed project is expected to have low impacts, project design features have been developed to further avoid and minimize impacts that may occur as a result of the project.

7.1 Vegetation Communities and Landcover

1. The applicant will demonstrate substantial conformance to plans approved through the Washoe County Special Use Permit.
2. The applicant will prepare a decommissioning plan that includes all site reclamation to be completed.
3. Typical construction best management practices (BMPs) would be implemented to minimize dust and erosion.
4. During construction, typical avoidance and minimization measures, such as having trash containers on site, a demarcated limit of work, and contractor education, will limit the potential for trash and other human disturbance.

7.2 Jurisdictional Waters

1. The applicant will obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit for construction and submit a copy to the Engineering Division prior to issuance of a grading permit.
2. Any increase in storm water runoff resulting from the development of the site shall be detained on site to the satisfaction of the County Engineer.

7.3 Wildlife Species

1. The project gen-tie line and all applicable electrical components will be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's(APLIC's) Suggested Practices for Avian Protection on Power Lines (APLIC2006) and Reducing Avian Collisions with Power Lines (APLIC 2012) to reduce the likelihood of large bird electrocutions and collisions.
2. All trash and food will be kept in closed and secured containers, which would be removed as necessary, to reduce the attractiveness to scavengers and predators, particularly ravens. Additionally, all road-killed and incidentally killed wildlife observed by the applicant within the project area will be promptly removed.

3. The applicant shall retain a qualified biologist to conduct a pre-disturbance nesting bird survey if construction begins during the nesting season (February 1 through August 15). If surface disturbing activities are to occur during this period, a pre-construction avian survey would be conducted in appropriate habitats by qualified biologists prior to surface disturbing activities commencing. If ground disturbing activities do not take place within 14 days, the areas would be resurveyed. If nesting migratory birds are present, appropriate buffers would be determined in coordination with NDOW and the USFWS, and applied until an approved biologist determines the young have fledged or the nest has failed.
4. To address concerns pertaining to avian collisions and strandings due to potential pseudo lake-effect, the project will prepare and implement a Wildlife Response and Reporting System (WRRS) and an action plan describing what to do if observed avian mortalities result in population-level impacts. The WRRS will provide a means of recording and collecting information on avian species found dead, injured, or stranded within the solar field by construction or operations personnel.
5. Access to adjacent lands used for hunting will be maintained.

8 REFERENCES

ACOE (U.S. Army Corps of Engineers). 1987. *Corps of Engineers Wetland Delineation Manual*. Online ed. Environmental Laboratory, Wetlands Research Program Technical Report Y-87-1. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station. January 1987. Accessed June 2012. http://www.fedcenter.gov/Bookmarks/index.cfm?id=6403&pge_id=1606.

ACOE. 2008a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* Environmental Laboratory, ERDC/EL TR-08-28. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center. September 2008. Accessed June 2012. http://el.erdc.usace.army.mil/elpubs/pdf/trel08-28.pdf.

ACOE. 2008b. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual*. Cold Region Research and Environmental Laboratory, ERDC/CRREL TR-08-12. Hanover, New Hampshire: U.S. Army Engineer Research and Development Center. August 2008.

ACOE and EPA (U.S. Environmental Protection Agency). 2008. "Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States*." December 2, 2008. http://water.epa.gov/lawsregs/guidance/wetlands/upload/2008_12_3_wetlands_CWA_Jurisdiction_Following_Rapanos120208.pdf.

AOU (American Ornithologists' Union). 2015. "Checklist of North and Middle American Birds." 56th Supplement. Accessed February 10, 2016. http://checklist.aou.org/taxa/.

Bell et. al., 2005. Geologic Map of the Wadsworth Quadrangle, Washoe County Nevada. Accessed December 5, 2014.

Bing Maps. 2014. [aerial photograph]. 1:200 scale. 2014.

California Energy Commission and California Department of Fish and Game. 2007. *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development*. Commission Final Report. California Energy Commission, Renewables Committee, and Energy Facilities Siting Division, and California Department of Fish and Game, Resources Management and Policy Division. CEC-700-2007-008-CMF.

Crother, B.I. (committee chair). 2012. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding*. Seventh Ed. Herpetological Circular No. 39. Prepared by the Standard English and Scientific Names Committee. Shoreview, Minnesota: Society for the Study of Amphibians and Reptiles. August 2012.

EPA (U.S. Environmental Protection Agency). 2014. *Watershed Assessment, Tracking & Environmental Results (WATERS)*. Last updated February 05, 2014. Accessed January 2015. http://www.epa.gov/waters/tools/WATERSKMZ/WATERSKMZ.html.

Google Earth. 2014. [aerial photograph]. 1:200 scale.

Grossman, D.H., D. Faber-Langendoen, A.S. Weakley, M. Anderson, P. Bourgeron, R. Crawford, K. Goodin, S. Landaal, K. Metzler, K.D. Patterson, M. Pyne, M. Reid, and L. Sneddon. 1998. *International Classification of Ecological Communities: Terrestrial Vegetation of the United States*. Vol. 1, *The National Vegetation Classification System: Development, Status, and Applications*. Arlington, Virginia: The Nature Conservancy.

Jepson Flora Project. 2016. *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California*. Accessed April 15, 2016. http://ucjeps.berkeley.edu/interchange/I_status_1+2.html.

NatureServe Explorer. 2015. *Descriptions of Ecological Systems*. Data current as of October 2015. NatureServe, Arlington, VA. Accessed December 27, 2016. http://www.natureserve.org.

Peterson, E. B. 2008. International Vegetation Classification Alliances and Associations Occurring in Nevada with Proposed Additions. Nevada Natural Heritage Program, Carson City, Nevada.

USDA NRCS (U.S. Department of Agriculture, Natural Resources Conservation Service). 1994. “Digital general soil association map developed by the National Cooperative Soil Survey” [vector digital data]. STATSGO Soils website. Accessed January 8, 2014. http://www.epa.gov/esd/land-sci/nv_geospatial/pages/nvgeo_gis4_statsgo_md.htm.

USDA. 2016a. Web Soil Survey. USDA Natural Resources Conservation Service, Soil Survey Staff. Accessed April 18, 2016. http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

USDA. 2016b. PLANTS Database. USDA Natural Resources Conservation Service. http://plants.usda.gov/.

USGS (U.S. Geological Survey). 2014. 7.5-Minute Fernley West, Olinghouse, and Wadsworth Topographic Quadrangles.

USGS, Gap Analysis Program (GAP). May 2011. National Land Cover, Version 2. https://gapanalysis.usgs.gov/gaplandcover/data/.

USFWS (U.S. Fish and Wildlife Service) 2014. *National Wetland Inventory.* Last updated March 22, 2013. Accessed April 2013. http://www.fws.gov/wetlands/Data/Mapper.html.

USFWS. 2016. "Critical Habitat and Occurrence Data" [map]. Accessed August 2016. http://www.fws.gov/data.

Washoe County. 2010. Washoe County Master Plan. Executive Summary. Adopted September 9, 2010. Accessed October 22, 2014. http://www.washoecounty.us/comdev/planning_docs.

Washoe County 2012. *Master Plan Truckee Canyon Area Plan*. Adopted as part of the Washoe County Master Plan. September 27, 2012. Accessed October 22, 2014. http://www.washoecounty.us/comdev_files/cp/truckee_canyon_area_plan.pdf.

Weatherbase 2014. Historical Weather for Wadsworth, Nevada. Accessed December 2014. http://www.weatherbase.com.

Wilson, D.E., and D.M. Reeder, eds. 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference.* 3rd ed. Online version. Baltimore, Maryland: Johns Hopkins University Press. Accessed April 2015. http://www.bucknell.edu/msw3/.

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APPENDIX A

Plant Species Observed

APPENDIX A
Plant Species Observed

VASCULAR SPECIES

DICOTS

ASTERACEAE—SUNFLOWER FAMILY

Artemisia spinescens—bud sagebrush
Artemisia tridentata—big sagebrush
Chrysothamnus viscidiflorus—yellow rabbitbrush
Ericameria sp.—rabbitbush
Chaenactis sp.—pincushion

BORAGINACEAE—BORAGE FAMILY

Amsinckia sp.—fiddleneck

CHENOPODIACEAE—GOOSEFOOT FAMILY

* *Halogeton glomeratus*—saltlover
* *Salsola tragus*—prickly Russian thistle
Atriplex confertifolia—shadscale saltbush

GERANIACEAE—GERANIUM FAMILY

* *Erodium cicutarium*—redstem stork's bill

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum davidsonii—Davidson's buckwheat
Eriogonum deflexum—flatcrown buckwheat

SARCOBATACEAE—NO COMMON NAME

Sarcobatus vermiculatus—greasewood

MONOCOTS

POACEAE—GRASS FAMILY

* *Bromus tectorum*—cheatgrass
Stipa hymenoides—Indian ricegrass

* signifies introduced (non-native) species

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APPENDIX B

Wildlife Species Observed

APPENDIX B
Wildlife Species Observed

BIRDS

FALCONS

FALCONIDAE—CARACARAS AND FALCONS

Falco mexicanus—prairie falcon
Falco sparverius—American kestrel

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Aquila chrysaetos—golden eagle
Buteo jamaicensis—red-tailed hawk
Buteo regalis—ferruginous hawk
Circus cyaneus—northern harrier

JAYS, MAGPIES, AND CROWS

CORVIDAE—CROWS AND JAYS

Corvus corax—common raven

LARKS

ALAUDIDAE—LARKS

Eremophila alpestris—horned lark

WRENS

TROGLODYTIDAE—WRENS

Salpinctes obsoletus—rock wren

INVERTEBRATES

BUTTERFLIES

PIERIDAE—WHITES AND SULFURS

Pieris rapae—cabbage white

MAMMALS

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus—mule deer

REPTILES

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Uta stanburiana—common side-blotched lizard

APPENDIX C

Nevada Department of Wildlife Analysis Response

STATE OF NEVADA

DEPARTMENT OF WILDLIFE

6980 Sierra Center Parkway, Suite 120
Reno, Nevada 89511
(775) 688-1500 • Fax (775) 688-1495

BRIAN SANDOVAL
Governor

TONY WASLEY
Director

ELIZABETH O'BRIEN
Deputy Director

JACK ROBB
Deputy Director

September 22, 2016

Brock Ortega
Sr. Wildlife Biologist
Dudek
605 Third St.
Encinitas, California 92024

Re: Dodge Flats Solar

Dear Brock Ortega:

I am responding to your request for information from the Nevada Department of Wildlife (NDOW) on the known or potential occurrence of wildlife resources in the vicinity of the Dodge Flats Solar located in Washoe County, Nevada. In order to fulfill your request an analysis was performed using the best available data from the NDOW's wildlife occurrences, raptor nest sites and ranges, greater sage-grouse leks and habitat, and big game distributions databases. No warranty is made by the NDOW as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data. These data should be considered **sensitive** and may contain information regarding the location of sensitive wildlife species or resources. All appropriate measures should be taken to ensure that the use of this data is strictly limited to serve the needs of the project described on your GIS Data Request Form. Abuse of this information has the potential to adversely affect the existing ecological status of Nevada's wildlife resources and could be cause for the denial of future data requests.

To adequately provide wildlife resource information in the vicinity of the proposed project the NDOW delineated an area of interest that included a four-mile buffer around the project area provided by you on Wednesday, September 21, 2016. Wildlife resource data was queried from the NDOW databases based on this area of interest. The results of this analysis are summarized below.

Big Game – Occupied mule deer distribution exists throughout the entire project area and portions of the four-mile buffer area. Occupied pronghorn antelope distribution exists within portions of the project area and four-mile buffer area. Occupied bighorn sheep distribution exists outside of the project area within portions of the four-mile buffer area. No known occupied elk distribution exists in the vicinity of the project area. Please refer to the attached maps for details regarding big game distributions relative to the proposed project area.

Greater Sage-Grouse – Greater sage-grouse habitat in the vicinity of the project area has primarily been classified as General habitat by the Nevada Sagebrush Ecosystem Program (http://sagebrusheco.nv.gov). Priority habitat also exists in the vicinity of the project area. Please refer to the attached maps for details regarding greater sage-grouse habitat relative to the proposed project area. There are no known radio-marked greater sage-grouse tracking locations in the vicinity of the project area. There are no known greater sage-grouse lek sites in the vicinity of the project area.

Raptors – Various species of raptors, which use diverse habitat types, may reside in the vicinity of the project area. American kestrel, bald eagle, barn owl, burrowing owl, Cooper's hawk, ferruginous hawk, golden eagle, great horned owl, long-eared owl, merlin, northern goshawk, northern harrier, northern saw-whet owl, osprey, peregrine falcon, red-tailed hawk, rough-legged hawk, sharp-shinned hawk, short-eared owl, Swainson's hawk, turkey vulture, and western screech owl have distribution ranges that include the project area and four-mile buffer area. Furthermore, bald eagle, Cooper's hawk, golden eagle, northern harrier, osprey, red-tailed hawk, and Swainson's hawk have been directly observed in the vicinity of the project area.

Raptor species are protected by State and Federal laws. In addition, bald eagle, burrowing owl, California spotted owl, ferruginous hawk, flammulated owl, golden eagle, northern goshawk, peregrine falcon, prairie falcon, and short-eared owl are NDOW species of special concern and are target species for conservation as outlined by the Nevada Wildlife Action Plan. Per the *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance* (United States Fish and Wildlife Service 2010) we have queried our raptor nest database to include raptor nest sites within ten miles of the proposed project area. There are 48 known raptor nest sites within ten miles of the project area. Please refer to the appendix for details regarding these raptor nest sites.

Other Wildlife Resources

There are no water developments in the vicinity of the project area. Additional species have also been observed in the vicinity of the project area. Please refer to the appendix for details regarding these species.

The proposed project area may also be in the vicinity of abandoned mine workings, which often provide habitat for state and federally protected wildlife, especially bat species, many of which are protected under NAC 503.030. To request data regarding known abandoned mine workings in the vicinity of the project area please contact the Nevada Division of Minerals (http://minerals.state.nv.us/).

The above information is based on data stored at our Reno Headquarters Office, and does not necessarily incorporate the most up to date wildlife resource information collected in the field. Please contact the Habitat Division Supervising Biologist at our Western Region Reno Office (775.688.1500) to discuss the current environmental conditions for your project area and the interpretation of our analysis. Furthermore, it should be noted that the information detailed above is preliminary in nature and not necessarily an identification of every wildlife resource concern associated with the proposed project. Consultation with the Supervising Habitat biologist will facilitate the development of appropriate survey protocols and avoidance or mitigation measures that may be required to address potential impacts to wildlife resources.

Mark Freese - Western Region Supervising Habitat Biologist (775.688.1145)

Federally listed Threatened and Endangered species are also under the jurisdiction of the United States Fish and Wildlife Service. Please contact them for more information regarding these species.

If you have any questions regarding the results or methodology of this analysis please do not hesitate to contact our GIS office at (775) 688-1439.

Sincerely,

Bonnie Weller

GIS Specialist/Biologist III
Nevada Department of Wildlife
GIS Section
(775) 688-1439
bweller@ndow.org

Appendix A: Raptor Nest Sites Table

Probable Use	Last Check	Last Active	Township/Range/Section
Burrowing Owl	3/27/1987		21 0200N 0250E 003
Buteo	5/12/1975	5/12/1975	21 0210N 0220E 002
Buteo	6/19/1979	6/19/1979	21 0200N 0240E 003
Buteo	6/20/1994		21 0200N 0240E 004
Buteo	6/20/1994		21 0200N 0240E 013
Buteo	6/23/2007	6/23/2007	21 0210N 0220E 002
Buteo	5/22/2014	5/22/2014	
Buteo/Corvid	5/22/2014	5/22/2014	
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Eagle	5/12/1975		21 0220N 0220E 028
Eagle	3/26/1976	3/26/1976	21 0200N 0230E 025
Eagle	5/26/1979	5/26/1979	21 0200N 0230E 021
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle/Buteo	5/22/2014	5/22/2014	
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Falcon - Confirmed	3/26/1976	3/26/1976	21 0200N 0230E 021
Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 026
Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 026

Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 027
Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 027
Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 028

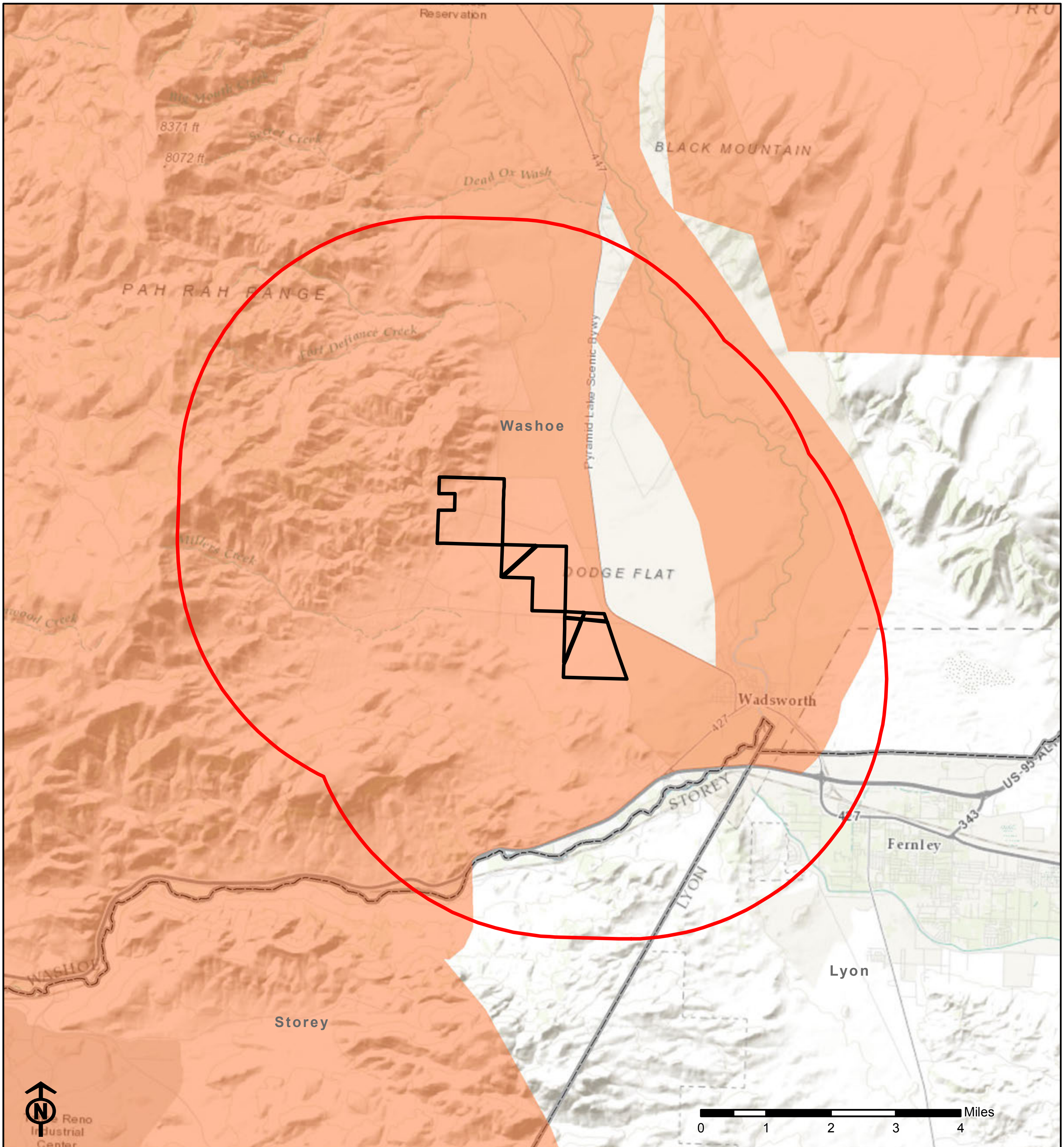
Appendix B: Other Wildlife Species Table

Common Name	ESA	State	SWAP SoCP
American robin		Protected	
Audubon's warbler		Protected	
Bewick's wren		Protected	
black bullhead			
black phoebe		Protected	
blue-gray gnatcatcher		Protected	
blue-winged warbler		Protected	
brown trout			
bullfrog			
bushtit		Protected	
California toad			Yes
Canada lynx			
Cassin's vireo		Protected	
chipping sparrow		Protected	
chisel-toothed kangaroo rat			
common carp			
common kingsnake			
common raven		Protected	
common sagebrush lizard			
common side-blotched lizard			
common yellowthroat		Protected	
cyprinid (unknown)			
desert horned lizard			Yes
desert woodrat			
downy woodpecker		Protected	
dusky flycatcher		Protected	
fathead minnow			
fox sparrow		Protected	
frog (unknown)			
golden-crowned kinglet		Protected	
gophersnake			
grasshopper mouse (unknown)			
gray flycatcher		Protected	
Great Basin collared lizard			Yes
Great Basin fence lizard			
Great Basin gophersnake			
Great Basin rattlesnake			
Great Basin whiptail			
greater sandhill crane			Yes
green-tailed towhee		Protected	
green sunfish			
Hammond's flycatcher		Protected	
hermit thrush		Protected	
house mouse			
house wren		Protected	

kangaroo rat (unknown)			
Lahontan cutthroat trout	Threatened		Yes
Lahontan redside			
largemouth bass			
lazuli bunting		Protected	
Lincoln's sparrow		Protected	
little pocket mouse			
long-nosed leopard lizard			Yes
MacGillivray's warbler		Protected	
Merriam's kangaroo rat			
mountain lion			
mountain sucker			
mountain whitefish			Yes
Nashville warbler		Protected	
Nevada side-blotched lizard			
North American deermouse			
northern desert horned lizard			Yes
northern flicker		Protected	
northern grasshopper mouse			
northern leopard frog		Protected	Yes
northern zebra-tailed lizard			
orange-crowned warbler		Protected	
Ord's kangaroo rat			
Pacific-slope flycatcher		Protected	
pale kangaroo mouse		Protected	Yes
quail (unknown)			
rainbow trout			
red-breasted nuthatch		Protected	
redside shiner			
ruby-crowned kinglet		Protected	
rufous hummingbird		Protected	Yes
Sacramento perch			
song sparrow		Protected	
southern grasshopper mouse			
southwestern willow flycatcher	Endangered	Endangered	Yes
speckled dace			
spotted towhee		Protected	
Steller's jay		Protected	
striped whipsnake			
sucker (unknown)			
Tahoe sucker			
terrestrial gartersnake			
Townsend's big-eared bat		Sensitive	Yes
Townsend's solitaire		Protected	
Townsend's warbler		Protected	
warbling vireo		Protected	
western fence lizard			
western mosquitofish			

western patch-nosed snake			
western pipistrelle			
western pond turtle			Yes
western tanager		Protected	
western wood-pewee			
white-crowned sparrow		Protected	
white-tailed antelope squirrel			
Wilson's warbler		Protected	
winter wren		Protected	
yellow-backed spiny lizard			
yellow-rumped warbler		Protected	
yellow warbler		Protected	
Yuma myotis			
zebra-tailed lizard			

ESA: Endangered Species Act Status
State: State of Nevada Special Status
SWAP SoCP: Nevada State Wildlife Action Plan (2012) Species of Conservation Priority



Project Area

Four Mile Buffer Area Boundary

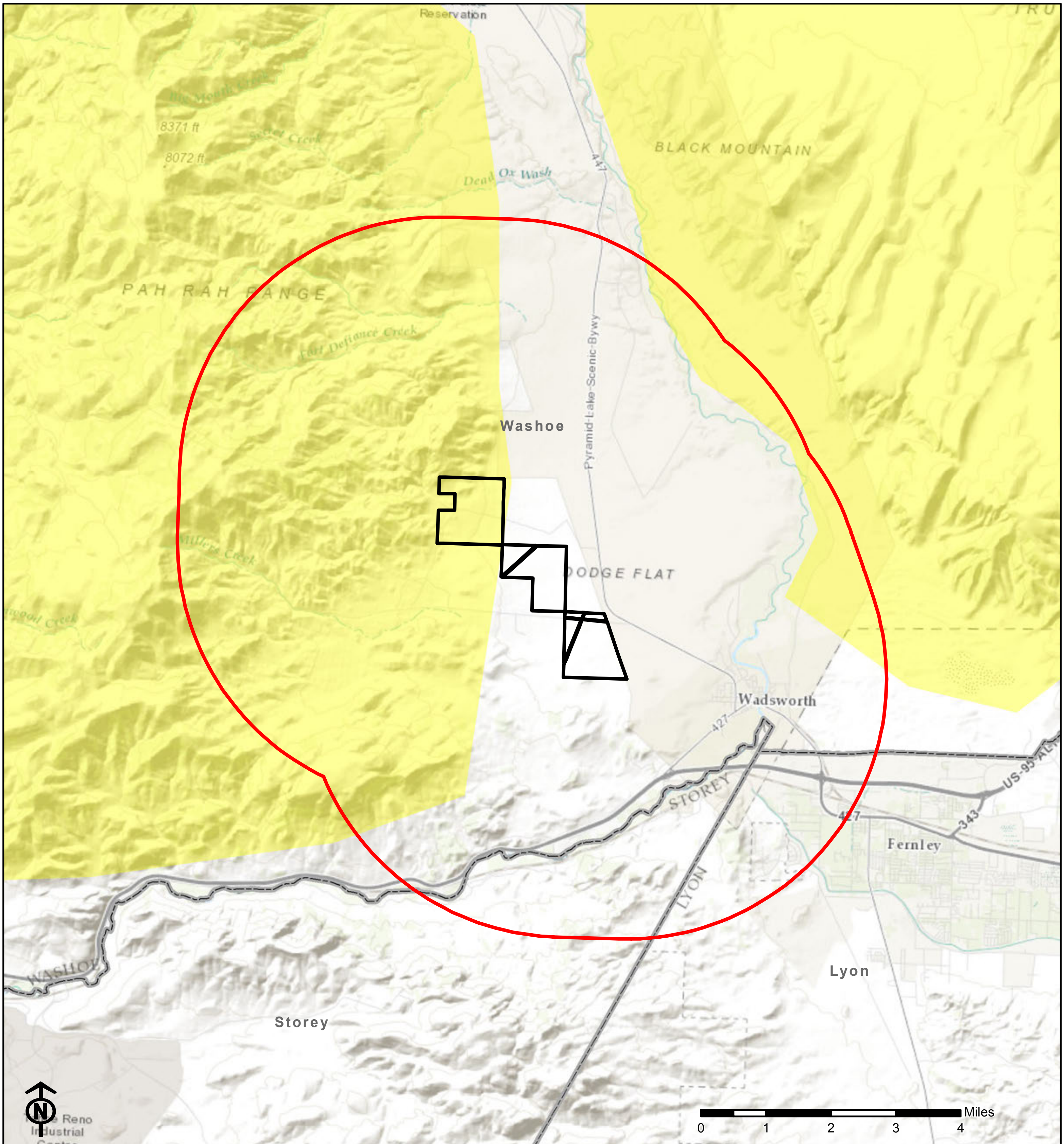
Mule Deer Distribution

Dodge Flats Solar
Mule Deer Distribution

September 22, 2016

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



Project Area

Four Mile Buffer Area Boundary

Pronghorn Antelope Distribution

NEVADA DEPARTMENT OF WILDLIFE

Dodge Flats Solar
Pronghorn Antelope Distribution

September 22, 2016

Projection: UTM Zone 11 North, NAD83

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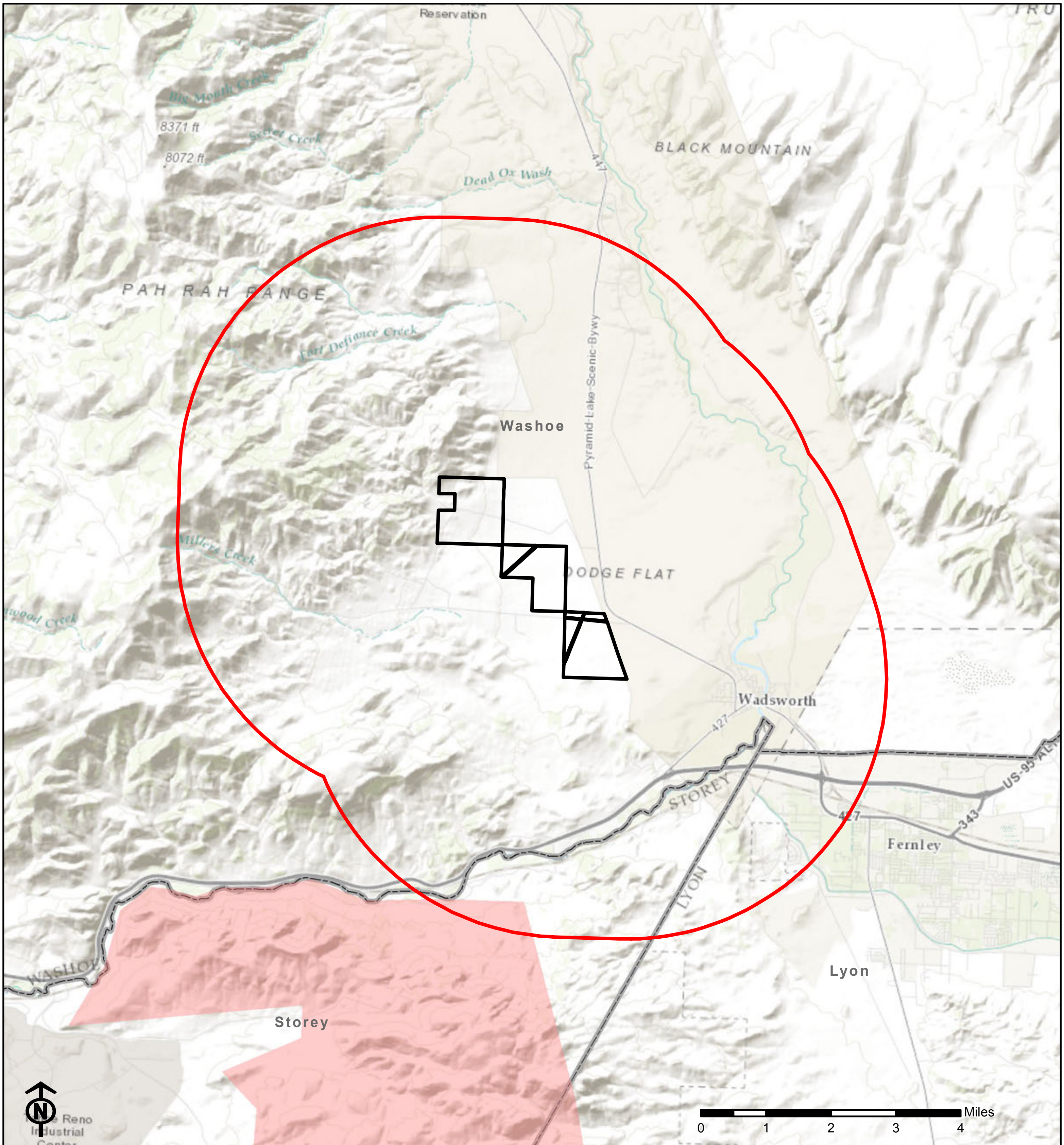


Project Area

Four Mile Buffer Area Boundary

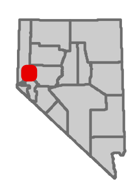
Bighorn Sheep Distribution

Dodge Flats Solar
Bighorn Sheep Distribution

September 22, 2016

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



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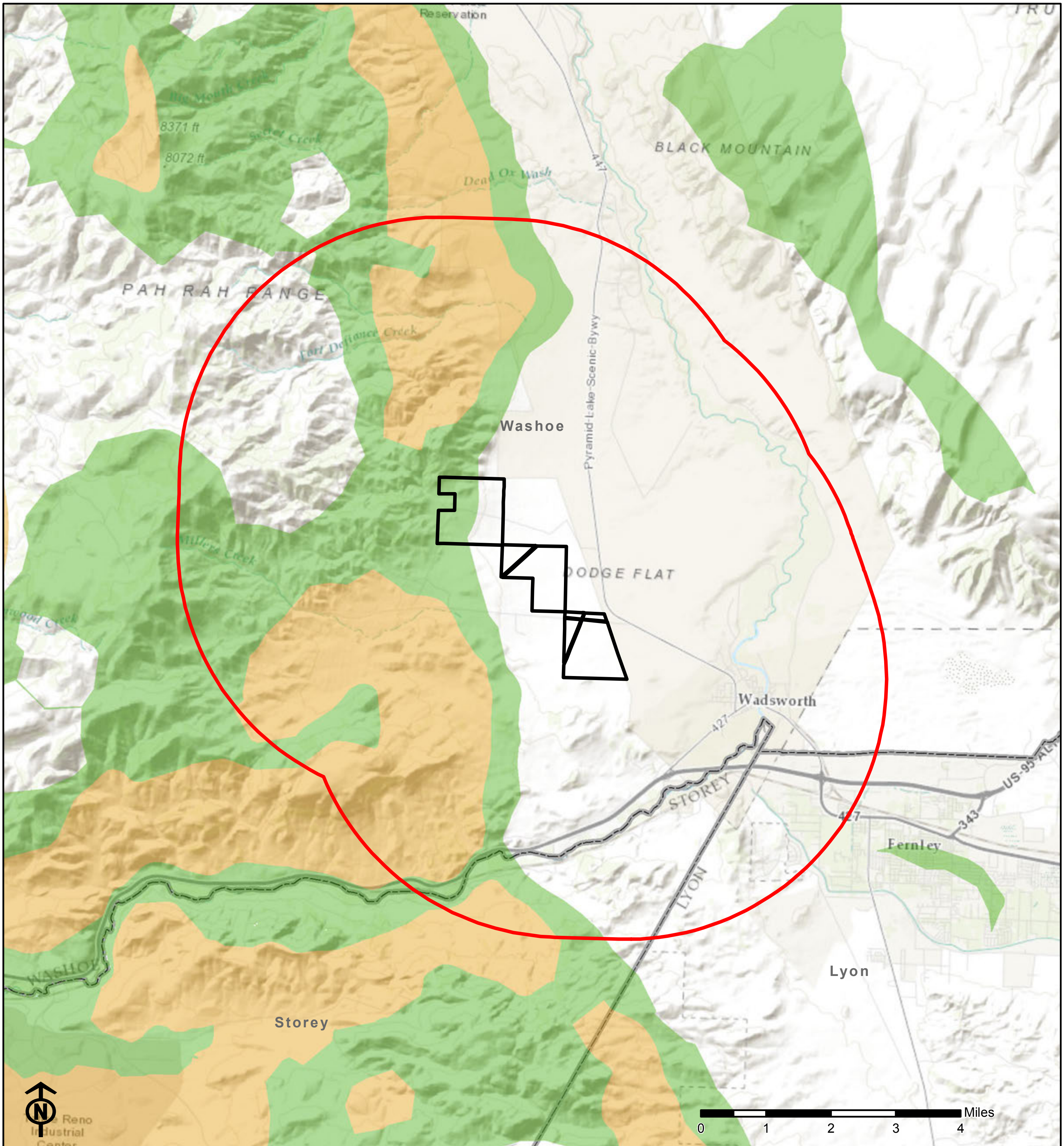

Project Area

Four Mile Buffer Area Boundary

Management

Core Habitat

Priority Habitat

General Habitat

Dodge Flats Solar
Greater Sage-Grouse Habitat

September 22, 2016

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.

BIOLOGICAL TECHNICAL REPORT
for the
DODGE FLAT SOLAR ENERGY PROJECT
WADSWORTH, WASHOE COUNTY, NEVADA

Prepared for:

Dodge Flat Solar, LLC
700 Universe Boulevard
Juno Beach, Florida 33408

Prepared by:

DUDEK

NOVEMBER 2017

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APPENDICES

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1 INTRODUCTION

Dudek prepared this Biological Technical Report (BTR) on behalf of Dodge Flat Solar LLC. (Dodge Flat Solar LLC) to summarize the methodology of a literature review, vegetation mapping, jurisdictional delineation and bird utilization count surveys completed for special-status biological resources potentially present on the proposed project site. Special-status biological resources include those listed as threatened or endangered by the federal Endangered Species Act, bird species protected by the Migratory Bird Treaty Act, jurisdictional areas as defined by the U.S. Army Corps of Engineers (ACOE) pursuant to Section 404 of the federal Clean Water Act and the Nevada Department of Wildlife (NDOW). This BTR provides the results of the field surveys, a summary of impacts to identified biological resources, and recommendations for avoidance of impacts to biological resources.

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2 REGULATORY SETTING

Federal Endangered Species Act

The federal Endangered Species Act (FESA) (16 U.S.C. 1533) gives joint authority to list a species as threatened or endangered to the Secretary of the Interior, represented by the U.S. Fish and Wildlife Service (USFWS), and the Secretary of Commerce, represented by the National Marine Fisheries Service (NMFS). Under FESA, the “take” of endangered or threatened fish, wildlife, or plants species or adverse modifications to critical habitat in areas under federal jurisdiction is prohibited. Under FESA, “take” is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The USFWS and NMFS have interpreted the definition of “harm” to include significant habitat modification that could result in the take of a species.

Either an incidental take permit under Section 10(a) or an incidental take statement under Section 7 is required if an activity would result in the take of a federally listed species. Section 7 requires the reviewing agency to determine whether any federally listed species, or species proposed for listing, may be present on a project site and if a project is likely to affect the species. Additionally, the reviewing agency must determine if a proposed project is likely to jeopardize the existence of a listed species or a proposed listed species, or result in destruction or adverse modification of proposed or designated critical habitat for such species. FESA requires the federal government to designate “critical habitat” for any listed species, which is defined as specific areas within the geographical area occupied by the species at the time of listing if they contain physical or biological features essential to the species conservation, and those features that may require special management considerations or protection. Additionally, it includes specific areas outside the geographical area occupied by the species if the regulatory agency determines that the area itself is essential for conservation.

USFWS and/or NMFS must authorize projects where a federally listed species is present and likely to be affected by an existing or proposed project. Generally, terrestrial and freshwater fish species are under the jurisdiction of USFWS, while marine and anadromous fish species are under the jurisdiction of NMFS. Project authorization may involve a letter of concurrence that the project will not result in the take of a listed species, or a Biological Opinion that describes what measures must be undertaken to minimize the likelihood of an incidental take. Projects determined by USFWS and NMFS to jeopardize the continued existence of a species cannot be approved under a Biological Opinion. Take that is incidental to the lawful operation of a project is permitted under Section 10(a) through approval of a habitat conservation plan, where a federal agency is not authorizing, funding, or carrying out the project.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.) regulates and prohibits taking, killing, possessing, harming, or trading in migratory birds. The MBTA addresses whole birds, parts of birds, and bird nests and eggs. This international treaty for the conservation and management of bird species that migrate through one or more countries is enforced in the United States by USFWS. Currently, birds are considered to be nesting under the MBTA only when there are eggs or chicks which are dependent in the nest.

Clean Water Act

The objective of the Clean Water Act (CWA) is to restore and maintain the chemical, physical and biological integrity of waters of the United States (as defined 33 CFR 328.3[a]). Section 401 of the CWA (33 U.S.C. 1341) prohibits the discharge of any pollutant into waters of the United States. Project applicants for a federal license or permit to conduct activities including, but not limited to, the creation or operation of facilities, which may result in discharge into waters of the United States, must obtain certification that the project would not violate applicable effluent limitations and water quality standards. Section 404 of the CWA (33 U.S.C. 1344) requires a federal license or permit from the U.S. Army Corps of Engineers (ACOE) (ACOE and EPA 2008) prior to the discharge of dredge or fill material into waters of the United States, unless activity is exempt from Section 404 permit requirements. Permit applicants must demonstrate that they have attempted to avoid or minimize impacts on the resource; however, if no further minimization of impacts is possible, the applicant is required to mitigate remaining impacts on all federally regulated waters of the United States.

Nevada Department of Wildlife

The Nevada Department of Wildlife (NDOW) has developed a statewide comprehensive wildlife conservation plan called the Nevada State Wildlife Action Plan (WAP) (2012) and includes a Species of Conservation Priority List in order to prevent wildlife species from becoming threatened or endangered. The WAP identified a total of 256 Species of Conservation Priority and the associated 22 Key Habitat types by which focus areas for conservation strategies for managing and mitigating impacts to the species and habitats can be applied.

3 PROJECT SETTING

3.1 Project Location

The proposed Dodge Flat Solar Energy Project (Proposed Project) is located on approximately 1,579 acres, about 3.5 miles northwest of the town of Wadsworth in an unincorporated part of Washoe County, Nevada (Figure 1). More specifically, the project is located north of Olinghouse Road and approximately 1.5 miles west of intersection with State Route 447. The proposed project is located on privately owned land but would require two permanent access roads within public lands managed by the Bureau of Land Management (BLM).

The study area is located on the Wadsworth U.S. Geological Survey (USGS) 7.5-minute quadrangles, in Section 6 of Township 20 North, Range 24 East; Sections 30 and 31 or Township 21 North, Range 24 East; and Sections 24, 25, 26, and 36 of Township 21 North, Range 23 East; the center point latitude is 39°39’12.71” N and the longitude is 119°20’22.96” W (Figure 2).

3.2 Project Description

Dodge Flat Solar LLC is considering the development of a solar project at the proposed project location. The project would include solar development located on lands most suitable for development based on the engineering and environmental constraints evaluation completed during the permitting stage. Surveys were previously conducted within the proposed project location by Dudek in 2014. However, revisions were made to the configuration of the project location that utilized the previous 2014 surveys to guide the currently proposed configuration.

3.3 Land Uses

The north central portion of the study area has been historically disturbed by mining operations (see disturbed habitat mapped on Figure 4 below) and is currently primarily unvegetated or contains a low cover of non-native plant species. The mining activity included extensive modifications of the landscape. The activities included the construction of roads, ditches, channels, pits and berms to reroute water around the mine site or isolate it in bermed areas. Some of the modifications still exist in original condition at the what appears to be a “reclaimed” portion of the mining area (presumably the quarry and ore processing area) and some have been left in place and/or failed over time, resulting in a large portion of the north-central section of the study area draining into, and terminating at the bermed reclaimed mining area (bermed pits) that is shown as disturbed habitat area in Figure 3. The remaining study area is vacant and mostly undisturbed with a land cover of native vegetation. Disturbances within the study area include the previously mentioned historical mining activities and uses ancillary to the mining operations, dirt roads, berms, channels, pits and power lines as well as, small trash dumps, recreational off road vehicle dirt tracks and other signs of recent and ongoing human disturbance. One area in the northern section of the study area appears to have been revegetated as evidenced by differing vegetation composition and relic irrigation piping.

Surrounding lands include public lands managed by the BLM and lands within with Pyramid Lake Indian Reservation managed by the Pyramid lake Tribal Council. All lands surrounding the study area are designated “Rural” within the Washoe County Master Plan (WCMP) (Washoe County 2012). In the Truckee Canyon Area Plan (TCAP), surrounding lands are currently assessed as “Undeveloped” (Public Lands), “Industrial” (Reservation), and other private lands include a mix of “Low Density Rural,” “Medium Density Suburban,” “Vacant-Minor Improvements Common Area,” and “Agricultural” (Washoe County 2012). In addition, gold mining has been noted in areas surrounding the project and the study area falls within an area designated as having moderate potential for geothermal activities (Washoe County 2010).

3.4 Soils

Soil mapping of the area is available from the USDA Natural Resources Conservation Service (NRCS) (USDA NRCS 2016a). The following soil types have been documented on site: Bango loamy sand, 0 to 2% slopes; Bango silt loam, 0 to 2% slopes; Juva silt loam, 2 to 4% slopes; Patna sand, 0 to 2% slopes; playas; and Trocken-biddleman-bluewing associated.

Bango loamy sand, 0 to 2% slopes. Bango series soils consist of very deep, well drained soils formed in alluvium (NRCS 2016). These soils are well-drained and are not considered hydric.

Juva silt loam, 2 to 4% slopes. Juva series soils are very deep soils formed from alluvium derived from mixed rocks. They are generally found on fan skirts, basin floor remnants, and alluvial fans (NRCS 2016). This soil is well-drained and is not considered hydric.

Mizel-Skedaddle-Rock outcrop association. This association is comprised of a combination of characteristics typical of the individual soil series. The Mizel series consist soils consist of very shallow, well drained soils formed in residuum from rhyolite (NRCS 2016). These soils are found primarily on hills with slopes of 15 to 50%. Skedaddle series soils consist of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from andesite and basalt. These soils are typically found on mountains, hills, and plateaus. This association also contains interspersed rock outcroppings. These soils are not considered hydric.

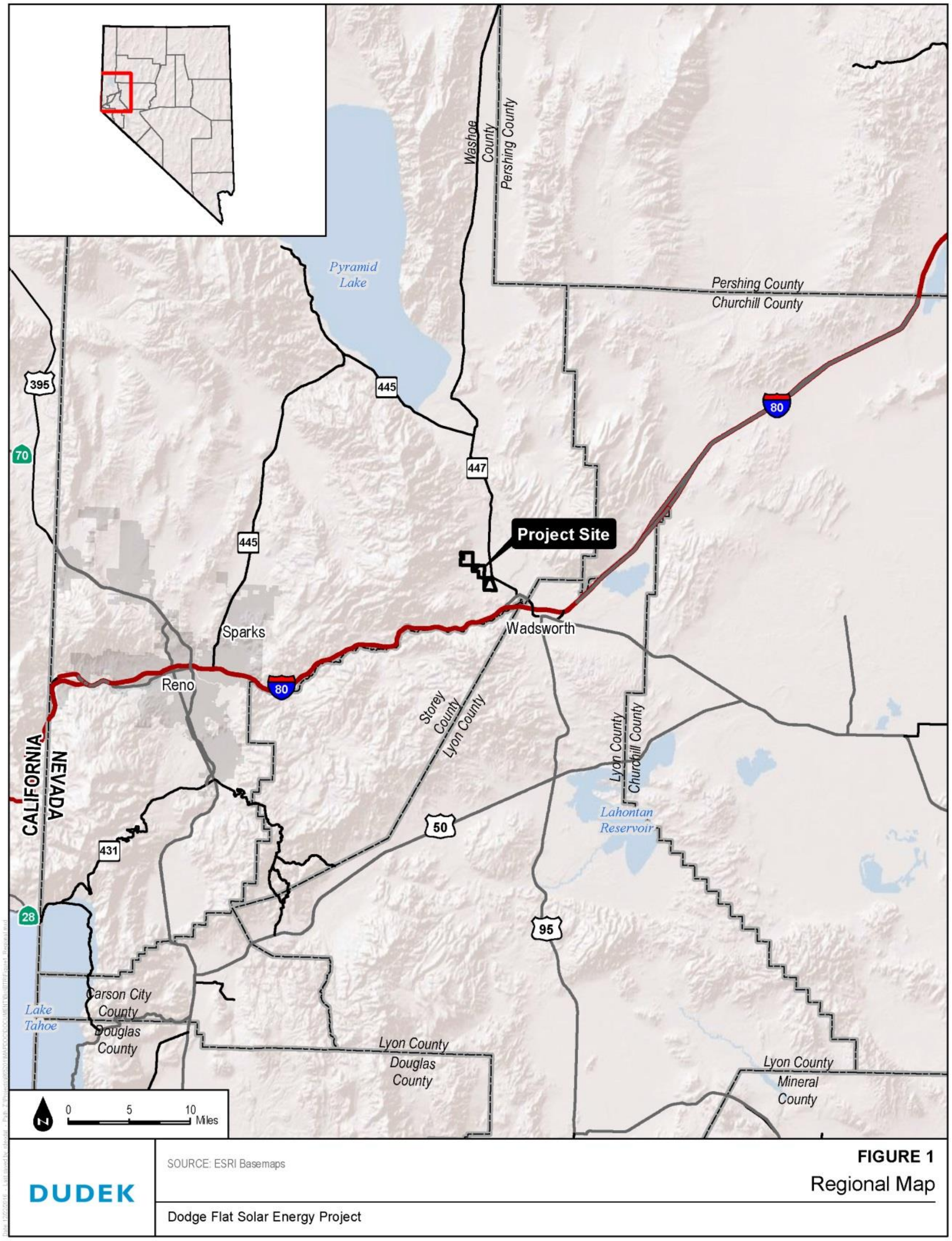
Patna sand, 0 to 2% slopes. Patna series soils are very deep soils formed in eolian sands over lacustrine deposits derived from mixed rocks. These soils are found on sand sheets and stable dunes on basin floor remnants (NRCS 2016). Patna series soils are somewhat excessively drained soils and are considered hydric.

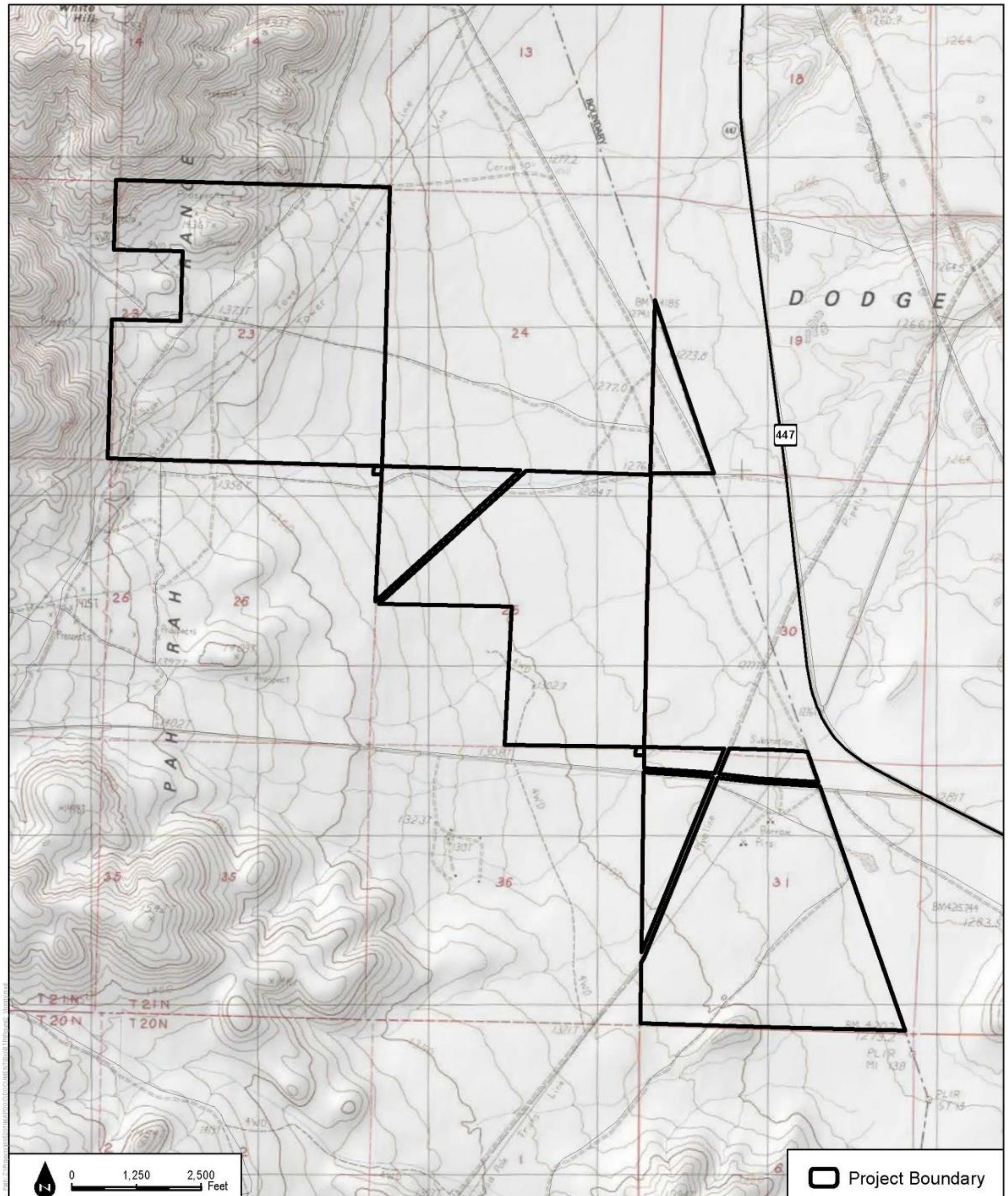
Playas. Playa landforms are characterized by the usually dry, nearly level lake plain that occupies the lowest parts of closed depressions, such as those occurring on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation-runoff events. Soils found in playas are usually fine grained. Playas are considered hydric soils (NRCS 2016).

Singatse-Mizel-Stingdorn association. This association is comprised of a combination of characteristics typical of the individual soil series. All three series are comprised of very shallow to shallow soils that were formed in residuum and colluvium derived primarily from volcanic rocks, rhyolite, andesite, or tuff. These soils are generally found on hills and mountains. These soils are not considered hydric.

Trocken-Biddleman-Bluewing association. This association is comprised of a combination of characteristics typical of the individual soil series. The Trocken and Biddleman series consist of very deep, well drained soils derived from mixed rocks. Bluewing series soils consist of very deep, excessively drained soils formed in alluvium derived from mixed rock. All soils in this association are typically found on fan remnants, beach plains, beach terraces, lake terraces, alluvial fans, and inset fans (NRCS 2016). These soils are not considered hydric.

During the site visit, soils were observed to have a loamy to sandy base with desert pavement or cryptogamic crusts of metavolcanic rocks ranging from pea sized to fist sized and a few scattered 3-foot diameter boulders. There were no visible differences between the soils listed by the USDA NRCS (1994) and those that were within the areas disturbed by the mining activities. No obvious tailing piles were present.


Pyramid Lake
Washoe County
Pershing County
Pershing County
Churchill County
395
70
445
447
80
Project Site
445
Sparks
Wadsworth
Reno
80
Storey County
Lyon County
Lyon County
Churchill County
CALIFORNIA
NEVADA
Lahontan Reservoir
50
431
28
95
Carson City County
Lake Tahoe
Douglas County
Lyon County
Douglas County
Lyon County
Mineral County
0 5 10 Miles
SOURCE: ESRI Basemaps
FIGURE 1
Regional Map
DUDEK
Dodge Flat Solar Energy Project



SOURCE: ESRI Basemaps; Storey County GIS

FIGURE 2
Vicinity Map

Dodge Flat Solar Energy Project

3.5 Topography

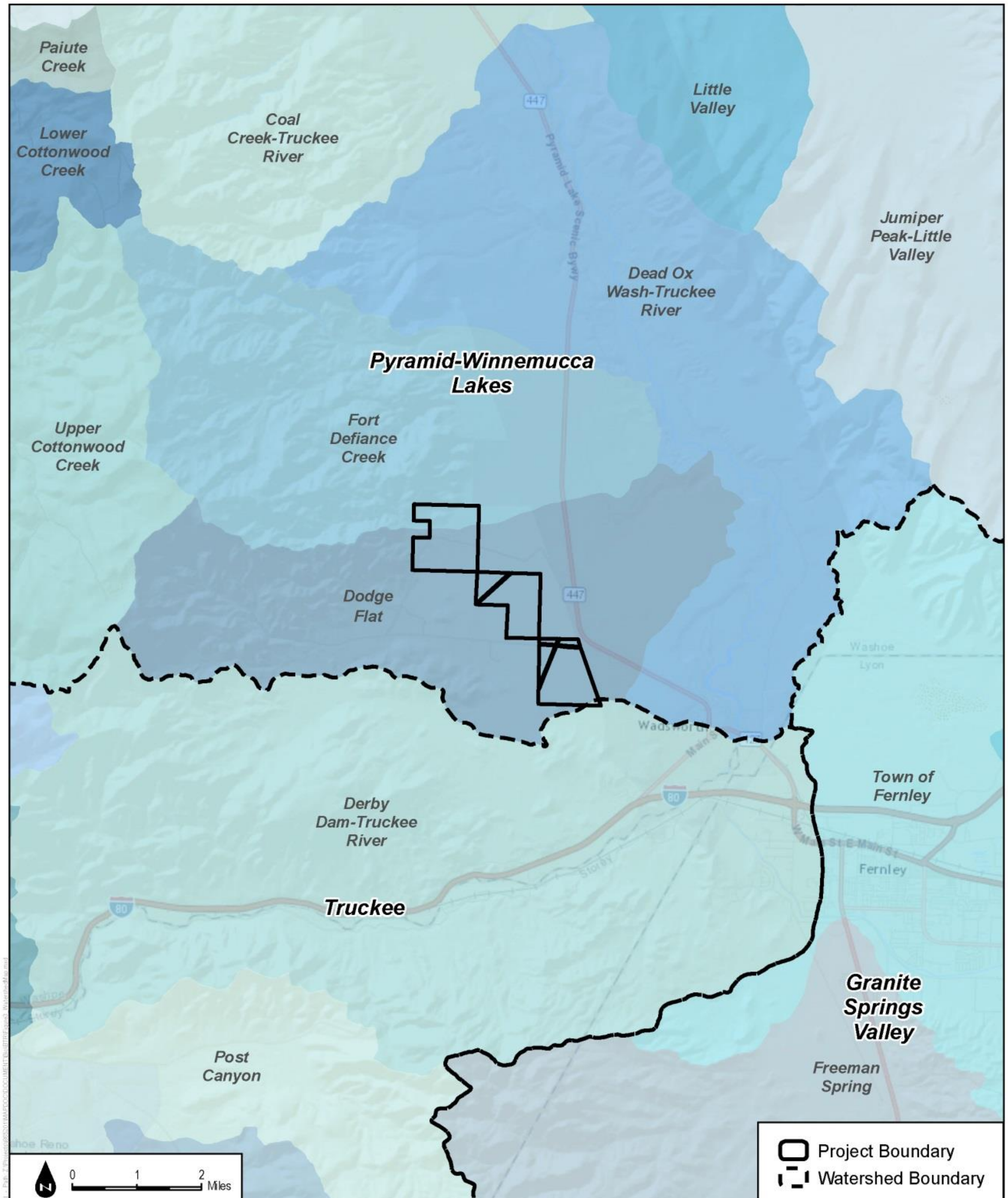
The study area is located within the Great Basin, east of the Sierra Nevada Mountains. The Pah Pah Range, a northwest-southeast mountain range, is located immediately west and the study area is located at the mouth of Olinghouse Canyon, Frank Free Canyon, and Tiger Canyon. Spanish Springs Peak, approximately 7,404 feet above mean sea level (amsl), is the tallest mountain peak within the vicinity and is approximately 13 miles west of the study area. Topography at the study area is generally flat with some topographic relief, gently sloping in a northwest direction. Site elevations vary from 4,479 feet amsl at the western portion to 4,176 feet amsl in the eastern portion of the study area.

3.6 Watershed and Hydrology

The majority of the study area lies within the Pyramid-Winnemucca Lakes Watershed, a 1,370-square-mile watershed, specifically within the Dodge Flat Subunit. The southeast corner of the study area lies within the Truckee Watershed, a 1,190-square-mile watershed, specifically within the Derby Dam-Truckee River Subunit (Figure 3).

The study area is regionally located within the Truckee River Basin, a closed topographic basin that includes the Lake Tahoe watershed and headwater tributaries along the eastern slopes of the Sierra Nevada. All water that enters the region either infiltrates into the groundwater basin or sink areas that may include wetlands, lakes and playas. The closest perennial feature to the study area is the Truckee River, located approximately 3.4 miles to the east of the northern portion, approximately 1.7 miles from the southern portion of the study area. It runs from Lake Tahoe approximately 120 miles to its terminus in Pyramid Lake.

The study area is located on an alluvial fan at the southern terminus of Fossil Canyon. The main stem channel coming from Fossil Canyon splits into two channels at the mouth of the canyon, approximately 250 feet north of the northern study area boundary. The eastern channel, Fossil Canyon Wash, continues southeast to Palm Canyon Wash and is outside the study area boundary. A hill located along the northeastern study area boundary separates Fossil Canyon Wash from the study area. The western main stem channel continues south along the western study area boundary and terminates at the existing historic quarry and ore processing area. At the northern boundary of the study area, a diversion berm exists that directs flows away from the reclaimed quarry to the southeast. Some of these berms have failed and flow from these failed areas enter and terminate within the bermed quarry. Distributary channels occur throughout the study area and flow south from Fossil Canyon Wash, continue south across the study area in a southerly direction, and terminate in the existing quarry. Five ephemeral compound channels flow through the study area generally from the southwest to the northeast, through culverts under Highway 447, and continue east to the Truckee River as it flows north to Pyramid Lake.



SOURCE: ESRI Basemaps; USGS NHD (2014)

DUDEK

FIGURE 3
Watershed Map

Dodge Flat Solar Energy Project

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4 METHODS

4.1 Literature Review & Agency Outreach

Prior to conducting fieldwork, the following available resources were reviewed to assess the potential for jurisdictional features: a 1:200-scale aerial photograph (Bing Maps 2014; Google Earth 2014), the USGS 7.5-minute topographic quadrangle (USGS 2014), USDA Natural Resources Conservation Service (NRCS) digital general soil association map GIS layer (USDA NRCS 1994), EPA Water Program Features (EPA 2014), Geologic Map of the Wadsworth Quadrangle, Washoe County Nevada (Bell et. al. 2005), Historical Weather for Wadsworth, Nevada (Weatherbase 2014), National Hydrography Dataset (USGS 2014), NDOW Wildlife Occurrences (Appendix C), and the National Wetland Inventory (USFWS 2014). Additional documents reviewed include the Critical Analysis for the Dodge Flat Solar Energy Project (Dudek 2014), Washoe County Master Plan (Washoe County 2010), and Master Plan Truckee Canyon Area Plan (Washoe County 2012). Additionally, the Nevada Natural Heritage Program (NHHP 2017) species information was queried for Washoe County.

Dudek and Dodge Flat Solar LLC have been coordinating closely with the Nevada Department of Wildlife and U.S. Fish and Wildlife Service regarding biological resources that may be present in the project area and associated survey methods that would be appropriate for the Project. To date two meetings have been held with the Wildlife Agencies along with multiple calls to discuss sensitive species that may have a potential to occur and associated surveys that may be required. Per discussions with the Wildlife Agencies it was determined that no special-status species surveys would be required for the Project. The Wildlife Agencies recommended that surveys be performed to determine the amount of avian activity in the area via use of Bird Utilization Count's (BUC's). The results of those surveys are provided below in Section

4.2 Vegetation Community and Land Cover Mapping

Vegetation mapping was conducted by Dudek in 2014 over the two southern parcels in accordance with the *International Vegetation Classification Alliances and Association Occurring in Nevada with Proposed Additions* (Peterson 2008) where feasible, and follow *National Vegetation Classification System* developed by the Nature Conservancy (Grossman et al. 1998) to accommodate the lack of conformity of the observed communities those of Peterson (2008). Land cover types not included were mapped based on site characteristics that existed during the field survey.

For areas not mapped by Dudek, including the entire northern parcel which was added on after the field work was conducted, the USGS GAP Land Cover Data Set (2011) was used to verify the vegetation within this northern parcel. The data set uses the Ecological System classification system developed by NatureServe (2015) to represent vegetation communities and land covers.

Vegetation communities mapped in the field were mapped directly onto a 200-foot-scale (1 inch = 200 feet), aerial photograph–based field map of the study area. Following completion of the fieldwork, all vegetation polygons were digitized using ArcGIS and GIS coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on site was determined. Figure 4 shows the vegetation communities and land cover types mapped on the proposed project site.

4.3 Jurisdictional Determination

A delineation of jurisdictional waters was conducted within the study area by Dudek on July 13th and 14th, 2016. Although the focus of the survey was on the portions of the study area that contained new areas not included in the 2014 survey (e.g., those added during the reconfiguration), the entire project area was evaluated to re-affirm previous findings during surveys performed during winter 2014. The project area was surveyed on foot or by an all-terrain vehicle (ATV) for the following types of features:

- Waters of the United States, including wetlands, under the jurisdiction of ACOE, pursuant to Section 404 of the federal Clean Water Act

The delineation of potential wetland waters of the United States was based on methodology described in the 1987 Corps of Engineers Wetlands Delineation Manual (ACOE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (ACOE 2008a).

Non-wetland waters of the United States are delineated based on the presence of an OHWM as determined utilizing the methodology in A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (ACOE 2008b). Vegetation, hydrology, soils, and evidence of the presence of an OHWM were examined at multiple data collection points (data points) within five representative channels spread throughout the study area to confirm the indicators were present and the boundaries of potentially jurisdictional features were being mapped accurately (Figure 4). Dudek biologists completed OHWM data sheets at five representative locations spread throughout the study area to confirm the indicators were present and the boundaries were being mapped accurately. For more detailed information regarding these data points, refer to the completed OHWM data sheets in Attachment D.

Characteristics of the low flow channel, low terrace, and active floodplain were noted. A Trimble GeoXT Global Positioning System (GPS) unit was used to mark the locations of low flow channels and the associated active floodplains. Where the boundary was clear, the transition was walked upstream/downstream and the longitudinal boundary was mapped with the GPS unit. After collection of field data, geographic information system (GIS) software ArcMap 10.0 was used to overlay the GPS data on an aerial photograph and the 2-foot interval topographic map. The field data, aerial photograph, and topography were assessed collectively to determine the active floodplain and the boundary of jurisdictional waters. Because the compound ephemeral drainages were generally uniform across the entire study area, a consistent approach to mapping was then implemented on the remaining drainages without the need to complete data sheets at each location.

The delineation methodology and the compound channel features are described in more detail below.

Low Terrace

Low terraces were mapped based on the identifiable lack of OHWM indicators. Low terraces contained a higher cover of vegetation. Soils were compact with a high percentage of large rocks and cobbles. Rock varnish was also present within the low terraces, with a darker surface color/tone present. The low terraces exhibited surface relief relative to the active floodplain and low-flow channel. Low terrace features are not considered jurisdictional waters or streambeds.

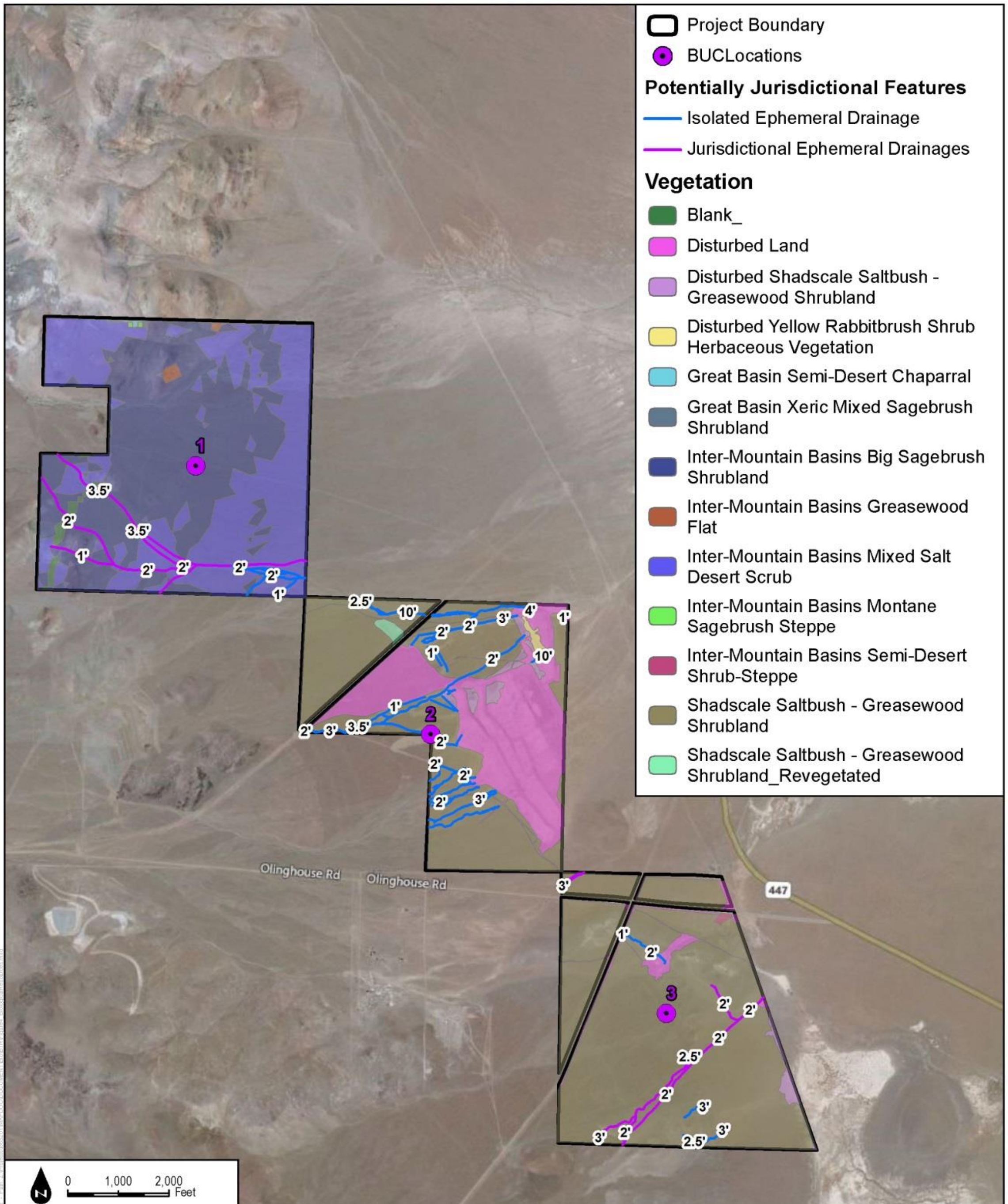
Active Floodplain

The active floodplain was delineated based on OHWM indicators including textural change from larger rock/cobbles to finer-grained sand. There were only minor vegetation changes between the active floodplain and low terraces. The active floodplain was generally mapped at the top of the defined banks of the compound channels, as that was where the vegetation maturity and soil characteristics indicated the abrupt start of the low terrace.

Low-Flow Channel

Low-flow channels were delineated based on defined beds, finer sediment deposition, and absence of vegetation cover. Shelving adjacent to the low flow channel was also observed.

Features that were previously mapped as potentially jurisdictional by Dudek in 2014 were also visually re-surveyed to determine if they persisted during the dry season and showed any new characteristics that could modify potential jurisdiction. Any features that did not persist through the dry season were revised to indicate the new size and location of the feature using the methods described above.



SOURCE: ESRI Basemaps; USGS NHD (2014)

DUDEK

FIGURE 4

Biological Resources

Dodge Flat Solar Energy Project

4.4 Bird Utilization Count

This area of the Great Basin is part of a major flyway or migration route, and there are a number of wetland resources present within the vicinity (e.g., within 20 to 50 miles) which might attract local movement. However many landscape features may enhance or detract from an area's attractiveness to migrating birds, including topography, direction of topographic features, general wind conditions, forage opportunities, relationship to attractive sites (e.g., lakes, ponds, rivers), and many other factors. Hence the need for site-specific studies typically conducted to determine the level of usage. In this case, due to the proximity of Pyramid Lake and wetlands and riparian areas associated with the Truckee River, the wildlife agencies considered the potential issue of birds migrating between important wetland areas in the region. Therefore, a monitoring study was conducted to identify the potential for this issue to occur.

There are a variety of methods for determining bird use of an area related to wind farms, both before the project is implemented to estimate risk to species, and after to verify actual impact to species. These include various state and federal suggestions related to eagles, birds, and bats, but all relate to wind farms. Emerging recommendations for solar farms have not yet been adopted. The goal of this effort was to provide general information which might be useful within the context of any future adopted plans. This would be accomplished by employing typical point count methods.

The method used for this project included Bird Use Count (BUC) Survey technique. This is a modified point-count survey method utilized to obtain a baseline index of bird use within the area. This data provides a robust depiction of the species and number of individuals anticipated to use the area during peak migration periods. Using this information, relative importance of the site may be determined. For the purposes of this project, the BUC surveys were conducted during the fall migration period and focused on large birds (e.g., raptors, eagles) and wetland species (e.g., pelicans, loons, grebes, herons, ducks).

Dudek performed 2-hour point counts due to more recent findings suggesting that 2-hour survey blocks are more likely to provide useful data. Surveys were performed from established and permanent vantage point locations on a weekly basis from October through early December. Surveys were rotated to cover morning and afternoon time periods and occurred during all types of weather conditions, including calm, windy, dry, rainy, hot, and cold. At the start and end of each survey, and every hour between, the biologist recorded meteorological data including temperature, wind speed and direction, precipitation, cloud cover, and visibility. BUC surveys were conducted under all weather conditions, so long as visibility was sufficient to permit identification of large birds 800 meters away, and up to 200 meters vertically. Table 1 summarizes the survey conditions.

Table 1
Bird Utilization Count Survey Conditions

Date	Hours	Personnel	Site	Conditions
2016-10-02	09:20–11:20	John Silva	BUC 2	60–67° F; 10% cc; 6–10 mph wind, gusts to 15–20 mph
2016-10-02	12:03–14:03	John Silva	BUC 3	65–66° F; 10–20% cc; 12–19 mph wind
2016-10-02	15:00–17:00	John Silva	BUC 1	67–68° F; 40–50% cc; 12–19 mph wind
2016-10-09	09:22–07:22	John Silva	BUC 3	52–58° F; 0% cc; 1–5 mph wind
2016-10-09	09:54–11:54	John Silva	BUC 1	65–68° F; 0% cc; 1–10 mph wind
2016-10-09	12:16–14:16	John Silva	BUC 2	70° F; 0% cc; 6–10 mph wind
2016-10-11	06:32–08:32	John Silva	BUC 2	48–50° F; 70% cc; 1–5 mph wind
2016-10-11	08:54–10:54	John Silva	BUC 1	50–55° F; 70% cc; 1–5 mph wind
2016-10-11	11:27–13:27	John Silva	BUC 3	56–59° F; 70% cc; 6–10 mph wind
2016-10-23	07:25–21:25	John Silva	BUC 3	49–50° F; 50% cc; 1–5 mph wind
2016-10-23	12:13–14:13	John Silva	BUC 1	56° F; 40% cc; 6–10 mph wind
2016-10-23	09:55–11:55	John Silva	BUC 2	56° F; 50% cc; 6–10 mph wind
2016-10-30	07:25–09:25	John Silva	BUC 1	48° F; 100% cc; 6–10 mph wind; light intermittent rain
2016-10-30	09:50–11:50	John Silva	BUC 2	48° F; 90–100% cc; 6–10 mph wind; light intermittent rain
2016-10-30	12:20–14:20	John Silva	BUC 3	50–52° F; 70% cc; 6–10 mph wind; light intermittent rain
2016-11-06	09:02–11:02	John Silva	BUC 3	58–60° F; 100% cc; 1–5 mph wind
2016-11-06	11:24–13:24	John Silva	BUC 2	61–64° F; 100% cc; 1–10 mph wind
2016-11-06	14:00–16:00	John Silva	BUC 1	66–68° F; 90% cc; 6–10 mph wind
2016-11-13	08:25–10:25	John Silva	BUC 1	53–55° F; 20% cc; 1–10 mph wind
2016-11-13	10:51–12:51	John Silva	BUC 3	57° F; 20% cc; 6–10 mph wind
2016-11-13	13:10–15:10	John Silva	BUC 2	61° F; 30% cc; 6–10 mph wind
2016-11-23	11:52–13:52	John Silva	BUC 3	48–50° F; 40–50% cc; 1–5 mph wind
2016-11-23	09:30–11:30	John Silva	BUC 2	48–50° F; 50% cc; 1–5 mph wind
2016-11-23	14:23–16:23	John Silva	BUC 1	51–52° F; 40% cc; 1–5 mph wind
2016-11-27	08:42–10:42	John Silva	BUC 2	32–36° F; 40–50% cc; 6–10 mph wind
2016-11-27	11:06–13:06	John Silva	BUC 3	41° F; 30% cc; 6–10 mph wind
2016-11-27	14:31–16:31	John Silva	BUC 1	43° F; 20% cc; 6–10 mph wind
2016-12-04	07:40–09:40	John Silva	BUC 1	40–46° F; 80–90% cc; 1–5 mph wind
2016-12-04	13:18–15:18	John Silva	BUC 3	45° F; 80% cc; 1–5 mph wind
2016-12-04	09:58–11:58	John Silva	BUC 2	48° F; 90% cc; 1–5 mph wind

During BUC surveys, the biologist surveyed from the observation point (OP) for the designated amount of time and record focal species detected in all directions and at all distances. Focal Species include all eagles, raptors, pelicans, loons, herons, grebes, ducks or special status bird species. Although detections at all distances were recorded, an emphasis was placed on detecting all eagles that pass within 0.5 mile (800 meters) of the OP, hereafter referred to as the "survey area."

The following was recorded for all focal species initially detected inside or outside of the survey area: date and time of detection; species; target distance and direction from OP in meters/degrees (when detected); target height above ground level (agl) in meters (rough; when detected); detection Mode (naked eye, binoculars, spotting scope, other); initial flight direction; passage direction; and number of individuals (if moving in a group).

In addition to the above, the following will be recorded for all focal species that pass within the survey area, with regard only to the portion of the observation occurring within the survey area: minimum and maximum height (agl) in meters; flight types exhibited (e.g., dive, hover, soar); and number of minutes the bird spends flying or perching within the survey area.

Using rangefinders and landmarks, the biologist was trained in estimating distances across the range expected for these surveys. The biologist used a Bushnell rangefinder, Ziess Diascope 85mm spotting scope, and 10x42 binoculars while conducting surveys to measure the distances to various landmarks around each station and use the landmarks accordingly in distance estimates.

Sampling (OP) points were established at vantage points which provide an unobstructed view of the surrounding area (Figure 4). The OP's were established such that all portions of the proposed project area were visible. Three OP's were established based on an average minimum survey point density between 1 and 1.5 points per square mile.

4.5 Plants and Wildlife

All plant species encountered during the field surveys were identified and recorded. Latin names for plant species follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2016), and common names follow the United States Department of Agriculture's Natural Resources Conservation Service PLANTS Database (USDA 2016b). Appendix A contains a complete list of plant species observed on the proposed project site during the survey.

All wildlife species, detected during field surveys by sight, calls, tracks, scat, or other signs, were identified and recorded. In addition to species actually observed, expected wildlife usage of the site was determined according to known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. No trapping or focused surveys for special-status or nocturnal species were conducted. Latin and common names for wildlife species referred to in this BTR follow Crother (2012) for amphibians and reptiles, Wilson and Reeder (2005) for mammals, and the American Ornithologists' Union's Checklist of North and Middle American Birds (AOU 2015) for birds. Appendix B contains a complete list of wildlife species observed on the proposed project site during the survey.

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5 RESULTS

5.1 Vegetation Communities, and Land Covers

The project site contains 12 vegetation communities and land covers as presented in Table 2. Of the 12 vegetation communities and land covers, five (disturbed land, shadscale saltbush-greasewood shrubland (including disturbed and revegetated), and disturbed yellow rabbitbrush shrub herbaceous vegetation) were verified in the field by Dudek and the remaining seven were mapped by the USGS GAP Land Cover Data Set using the NatureServe classification system.

Table 2
Vegetation Communities and Land Cover Types

Vegetation Communities/Land Cover Types	Acreage
Not Mapped*	5.98
Disturbed Land	198.76
Great Basin Semi-Desert Chaparral	0.61
Great Basin Xeric Mixed Sagebrush Shrubland	0.66
Inter-Mountain Basins Big Sagebrush Shrubland	329.58
Inter-Mountain Basins Greasewood Flat	2.73
Inter-Mountain Basins Mixed Salt Desert Scrub	271.96
Inter-Mountain Basins Montane Sagebrush Steppe	0.44
Inter-Mountain Basins Semi-Desert Shrub-Steppe	1.03
Shadscale Saltbush - Greasewood Shrubland	743.34
Shadscale Saltbush - Greasewood Shrubland (disturbed)	18.21
Shadscale Saltbush - Greasewood Shrubland (revegetated)	3.50
Yellow Rabbitbrush Shrub Herbaceous Vegetation (disturbed)	2.41
Total	**1,579.23**

Note:
* This area was not mapped by Dudek or by the USGS GAP Land Cover Data Set.

5.2 Jurisdictional Features

The study area does not support hydrophytic vegetation or hydric soils; therefore, no jurisdictional wetlands with all three parameters occur within the study area. The study area is located on an alluvial material, with compound ephemeral drainages that meander and connect to the Truckee River. Twelve jurisdictional distributary channels cross the study area, and numerous other isolated ephemeral channels with no connection to the Truckee River cross portions of the site and either lose OHWM indicators or enter the reclaimed mining area and disappear. Aerial photographs indicate that the mining and ore processing impacts occurred prior to 1993 (earliest aerial photos reviewed); therefore, the anthropogenic disturbance, soils and hydrologic features associated with the former mining operation are considered to be new normal circumstances in the study area.

The study area does not support Traditional Navigable Waters, interstate waters, or waters that support interstate commerce (CFR 328.3(a) parts 1–4); therefore, ACOE jurisdiction was determined based on connectivity to a waters of the United States (CFR 328.3(a) part 5). The study area supports a total of 1.091 acres and 22,917.8 linear feet of jurisdictional waters of the United States and a total of 1.803 acres and 35,461.1 linear feet of isolated, non-jurisdictional water features. Figure 4 depicts the geographic extent of jurisdictional and isolated drainages within the study area. The 12 on-site jurisdictional ephemeral drainages connect to the Truckee River, located just east of the study area; the Truckee River originates in California in Tahoe City and flows to Pyramid Lake in Nevada. The Truckee River is an interstate coldwater perennial river that significantly affects the physical, chemical, and biological properties of Pyramid Lake, and is therefore a non-wetland waters of the United States under the jurisdiction of ACOE. Also, its flows originate in Lake Tahoe, a navigable water that supports interstate commerce between California and Nevada.

The drainages mapped as "isolated ephemeral drainages" (IED) either lack indicators of an ordinary high water mark before they connect to a waters of the United States or they reach the reclaimed mining area and disappear. Although subject to final verification by the ACOE, these isolated waters are presumed not jurisdictional pursuant to Section 404 of the CWA.

5.3 Bird Utilization Count

Six target species (e.g., raptors, eagles) and one non-target species (common raven) were observed during the surveys. No wetland species (e.g., pelicans, loons, grebes, herons, ducks) were observed during any of the surveys. Table 3 summarizes the BUC survey observations.

Table 3
Bird Utilization Count Survey Results

Date	Species	Number of Individuals	Time of Observation	Duration in Buffer	Behavior	Distance (meters)	Direction of Observation (degrees)
BUC 1							
2016-10-09	Northern Harrier (*Circus cyaneus*)	1	10:17	00:45	Flying: Contour hunting at 85°	500	90
2016-10-23	Common Raven (*Corvus corax*)	1	13:02	Not Recorded			
2016-10-23	Common Raven (*Corvus corax*)	1	13:18	Not Recorded			
2016-10-23	Golden Eagle (*Aquila chrysaetos*)	1	Not Recorded	01:15	Flying: Flapping at 90°	200	45

Table 3
Bird Utilization Count Survey Results

Date	Species	Number of Individuals	Time of Observation	Duration in Buffer	Behavior	Distance (meters)	Direction of Observation (degrees)
2016-11-06	American Kestrel (*Falco sparverius*)	1	15:28	00:03	Perched on Power/com pole 10 meters high	300	290
2016-11-06	Northern Harrier (*Circus cyaneus*)	1 male	15:22	01:30	Flying: Contour hunting at 180°	100	0
2016-11-27	Golden Eagle (*Aquila chrysaetos*)	1	Not Recorded	00:25	Flying: Soaring	160	95
2016-12-04	Ferruginous Hawk (*Buteo regalis*)	1 juvenile	08:35	00:15	Flying: Flapping	500	50
2016-12-04	Red-tailed Hawk (*Buteo jamaicensis*)	1	09:14	00:40	Flying: Flapping at 180°	100	90
BUC 2							
2016-11-06	Common Raven (*Corvus corax*)	1	12:31	Not Recorded			
2016-11-06	Common Raven (*Corvus corax*)	5	Not Recorded	West of BUC 2	Roosting on rocky mound	1500	Not Recorded
2016-11-06	Golden Eagle (*Aquila chrysaetos*)	2	12:15	One individual flew over BUC 3	Flying: Soaring	2,000	270
2016-11-06	Northern Harrier (*Circus cyaneus*)	1	12:16	01:54	Flying: Contour hunting at 90°	500	180
2016-11-27	Red-tailed Hawk (*Buteo jamaicensis*)	1	08:49	Not Recorded	Perched on Power/com pole 8 meters high	400	15

Table 3
Bird Utilization Count Survey Results

Date	Species	Number of Individuals	Time of Observation	Duration in Buffer	Behavior	Distance (meters)	Direction of Observation (degrees)
BUC 3							
2016-11-13	Prairie Falcon (*Falco mexicanus*)	1	23:19	Perched for 5 min. Left and returned 6 min. Later. Stayed perched for 20 min. Then departed.	Perched on Power/com pole 30 meters high	200	222
2016-11-27	American Kestrel (*Falco sparverius*)	1	12:27	00:35	Flying: Fast flying, not hunting, at 245°	100	45

5.4 Plant and Wildlife Diversity

A total of 15 plant species were observed during the 2014 field surveys, including 4 non-native and 11 native species. Appendix A contains a complete list of plant species observed on the proposed project site during the survey.

One reptile species, common side-blotch lizard (*Uta stanburiana*), one mammal species, mule deer (*Odocoileus hemionus*), and one invertebrate, cabbage white (*Pieris rapae*), were detected during the 2014 field survey. A total of twenty bird species were detected during the field surveys. No aquatic habitat was observed within the proposed project site; therefore, no aquatic or semi-aquatic species are expected to occur on site. Appendix B contains a complete list of wildlife species observed on the proposed project site during the survey.

5.5 Special-Status/Regulated Resources

The following resources are discussed in this section: wildlife species potentially present on the proposed project site that have special designations due to declining, limited, or threatened populations.

Sources used for determination of special-status biological resources are as follows:

- USFWS Species Occurrence Data for federally listed threatened and endangered animal species (USFWS 2016)
- Species of Conservation Priority and/or target species as identified by the Nevada Wildlife Action Plan

5.5.1 Special-Status Wildlife Species

The Nevada Department of Wildlife has outlined species known or potential occurrence in the vicinity (4-mile buffer) of the project site. Special-status species known to occur in the area include greater sage grouse (*Centrocercus urophasianus*), mule deer, bighorn sheep (*Ovis canadensis*), and pronghorn antelope (*Antilocapra americana*). Mule deer was the only species observed within the project site. Appendix C presents the special-status wildlife species known to have potential to occur within the project vicinity (4-mile buffer around project area).

Greater Sage Grouse – Greater sage grouse is the largest member of the grouse family and occurs within parts of 11 states. It is the subject of multi-state conservation and land management efforts intended to stabilize and augment the population. In 2015, the USFWS determined that the greater sage grouse did not warrant listing. The non-migratory species occurs in mixed open and sage scrub lands which include a mix of scrub and grasses. The best nesting habitat includes more sagebrush canopy and lateral cover and grass cover over 8 inches in height.

Discussions with NDOW and the FWS determined that populations were known to occur to the north and west, but not within the project site vicinity. It was observed by NDOW biologists that the site did not appear to support good habitat quality for the species and their presence there had low potential. This was supported by the NDOW report which stated that the "…habitat in the vicinity of the project area is generally categorized as Low Value Habitat/Transitional Range." Further, habitat assessment maps only show Low Value Habitat/Transitional Range across a small portion of the southern 1/8th of the site. The remainder of the site has no designation.

Big Game Species – Big game species such as pronghorn antelope and mule deer are anticipated to occur in the project area. Discussions with NDOW indicated that it the species may occur, however their only concern was allowing for movement of these species around and through the project area.

As mentioned, the NNHP was queried for Washoe County to generate a list of species that could occur in the County. The wildlife species that are either considered sensitive, threatened, or endangered by the State or federally listed under the federal Endangered Species Act are listed in Table 4 and their potential to occur on the project site is described.

Table 4
Federally Listed or State Critically Endangered Wildlife with Potential to Occur on Project Site

Common Name (Scientific Name)	Nevada Status	Federal Status	Potential To Occur
Cui-ui (*Chasmistes cujus*)	SE	FE	No potential to occur due to lack of suitable habitat for this fish species.
Lahontan cutthroat trout (*Oncorhynchus clarkia henshawi*)	None	FT	No potential to occur due to lack of suitable habitat for this fish species.
Warner sucker (*Catostomus warnerensis*)	None	FT	No potential to occur due to lack of suitable habitat for this fish species.
Sierra Nevada yellow-legged frog (*Rana sierrae*)	None	FE	No potential to occur due to lack of suitable habitat and outside of species known range.
Carson wandering skipper (*Pseudocopaeodes eunus obscurus*)	None	FE	Not expected to occur due to lack of larval host plant and project area is outside of its known range.
North American wolverine (*Gulo gulo luscus*)	None	PFT	Not expected to occur due to lack of suitable habitat.

SE = state endangered species; FE = federally listed endangered; FT = federally listed threatened; PFT = Proposed federally list threatened
Source: NNHP 2017; USFWS 2017.

5.5.1 Special-Status Plant Species

As mentioned, the NNHP was queried for Washoe County to generate a list of species that could occur in the County. The plant species that are either considered critically endangered by the State or federally listed under the federal Endangered Species Act are listed in Table 5 and their potential to occur on the project site is described.

Table 5
Federally Listed or State Critically Endangered Plants with Potential to Occur on Project Site

Common Name (Scientific Name)	Nevada Status	Federal Status	Habitat/Elevation/Blooming Period or Survey Window	Potential To Occur
Steamboat buckwheat (*Eriogonum ovalifolium* var. *williamsiae*)	CE	FE	Young, shallow, poorly-developed, dry soils derived from siliceous opaline sinter precipitated by past thermal spring flows, but not currently near surface water, in open areas with sparse *Atriplex confertifolia, Sarcobatus vermiculatus, hrysothamnus nauseosus,* etc. Sometimes found on adjacent deeper and/or disturbed soils when competitive vegetation is lacking. Dependent on wetland margin areas/ May–July/4,565–4,720 feet (NNHP 2017)	Not expected to occur. No wetlands are present on the project site.
Carson Valley monkeyflower (*Erythranthe carsonensis*)	CE	None	Great Basin scrub (openings); granitic/annual herb/Apr–June/4,600–5,200 feet	Low potential to occur. The site is just outside of the species' known elevation range. While there is Great Basin scrub on site, the closest known occurrence is approximately 36 miles from the project site (Fraga 2012) .
Webber ivesia (*Ivesia webberi*)	CE	FT	Great Basin scrub (volcanic ash), Lower montane coniferous forest, Pinyon and juniper woodland; sandy or gravelly/perennial herb/May–July/3,280–6,810 feet	Low potential to occur. While there is Great Basin scrub on site and the project is within the known elevation range of the species, the closet known extant occurrence is approximately 24 miles away. Additionally the NNHP (2017), indicates that the inventory surveys are almost complete.
whitebark pine (*Pinus albicaulis*)	None	C	Thin rocky soils mostly on peaks, ridges, and exposed northerly aspects, usually in the subalpine zone, but descending on acidic altered andesite and other specialized soils well into the pinyon/juniper zone/6,587–10,719 feet/evergreen (NNHP 2017)	Not expected to occur. The site is outside of the species' known elevation range. Additionally, the species is a conspicuous evergreen tree that would have been observed if present.

Table 5
Federally Listed or State Critically Endangered Plants with Potential to Occur on Project Site

Common Name (Scientific Name)	Nevada Status	Federal Status	Habitat/Elevation/Blooming Period or Survey Window	Potential To Occur
Williams combleaf (*Polyctenium williamsiae*)	CE	None	Great Basin scrub, Marshes and swamps, Pinyon and juniper woodland, Playas, Vernal pools; sandy, volcanic, lake margins/perennial herb/Mar–July/4,415–8,860	Not expected to occur. No aquatic or wetland habitats on the project site.
Tahoe yellowcress (*Rorippa subumbellata*)	CE	None	Lower montane coniferous forest, Meadows and seeps; decomposed granitic beaches/perennial rhizomatous herb/May–Sep/6,200–6,250 feet	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. No aquatic or wetland habitats on the project site.

CE = critically endangered plant (NAC 527.010); FE = federally listed endangered; FT = federally listed threatened; C = candidate for federal listing.
Source: NNHP 2017; USFWS 2017.

6 PROJECT IMPACTS

6.1 Definition of Impacts

Permanent direct impacts typically refer to 100% permanent loss of a biological resource. These impacts refer to the area where vegetation clearing, grubbing, and mass grading would occur (the "project footprint"). Wherever existing vegetation or land cover would be permanently affected is considered to be a permanent direct impact.

Direct temporary impacts typically refer to short-term removal of a biological resource where the resource is expected to fully recover its function upon completion of a project. Areas subject to temporary disturbance may include slope remediation sites, construction access roads, staging areas, stockpiles, mowed areas, and dredging areas. Such sites would not have permanent structures.

Indirect impacts are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct construction disturbance zone. Indirect impacts may affect areas within the defined project site but outside the construction disturbance zone, including open space and areas outside of a project site, such as downstream effects. Indirect impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to development of open space areas (i.e., development-related long-term effects). In most cases, indirect effects are not quantified, but in some cases, quantification might be included, such as total dissolved solids released to downstream areas or using a noise contour to quantify indirect impacts to nesting birds.

6.2 Impacts to Vegetation Communities and Land Covers

Permanent direct impacts are assumed to occur to approximately 1,122 acres to eight vegetation communities or land covers would occur as a result of implementation of the proposed project (Figure 5). As noted previously in Section 3.3, previous mining activities and ore processing impacts have resulted in a disturbed habitat to approximately 20% of the project area. The disturbed areas associated previous mining activities are shown in Figure 4 and classified below in Table 6 as disturbed lands.

Table 6
Impacts to Vegetation Communities and Land Cover Types

Vegetation Communities/Land Cover Types	Acreage
Disturbed Land	194.15
Inter-Mountain Basins Big Sagebrush Shrubland	73.13

Table 6
Impacts to Vegetation Communities and Land Cover Types

Vegetation Communities/Land Cover Types	Acreage
Inter-Mountain Basins Mixed Salt Desert Scrub	154.50
Inter-Mountain Basins Semi-Desert Shrub-Steppe	1.02
Shadscale Saltbush - Greasewood Shrubland	676.50
Shadscale Saltbush - Greasewood Shrubland (disturbed)	17.23
Shadscale Saltbush - Greasewood Shrubland (revegetated)	3.32
Yellow Rabbitbrush Shrub Herbaceous Vegetation (disturbed)	2.41
Total	**1,122.26**

Due to the location of the proposed project in an undeveloped open space area, long-term indirect impacts to vegetation communities are anticipated. During construction of the project, indirect effects may include dust, which could disrupt plant vitality in the short term, or construction-related soil erosion and runoff. Long-term edge effects could include intrusions by humans, and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to pollutants (fertilizers, pesticides, herbicides, and other hazardous materials), soil erosion, litter, fire, and hydrologic changes (e.g., surface and groundwater level and quality). Implementation of measures outlined below in Section 7, short- and long-term indirect impacts to off-site, adjacent vegetation communities would be reduced.

6.3 Impacts to Jurisdictional Waters

Permanent direct impacts could result to jurisdictional drainages depending on final engineering, as a result of implementation of the proposed project.

Indirect impacts to jurisdictional resources are typically affected in the short-term by dust, invasive plant species, and increased human presence and in the long-term by changes in the velocity of runoff during and following construction, which could adversely affect the integrity of downstream resources causing erosion and sedimentation. However, by incorporating avoidance measures outlined below in Section 7, short- and long-term indirect impacts to off-site, adjacent jurisdictional waters and wetlands would be reduced.

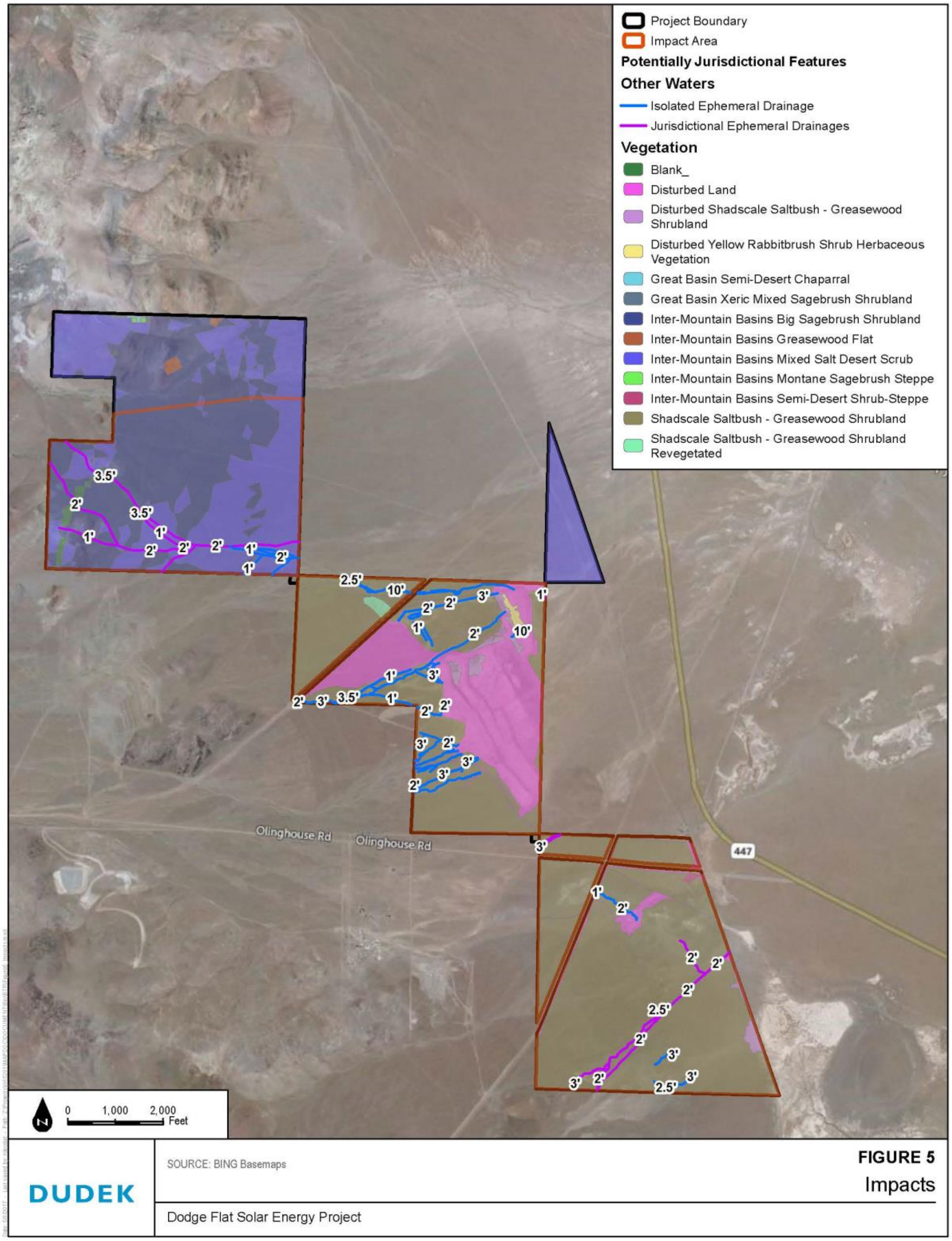

FIGURE 5
Impacts

6.4 Impacts to Wildlife Species

Six target species (e.g., raptors, eagles) and one non-target species (common raven) were observed during the BUC surveys. No wetland species (e.g., pelicans, loons, grebes, herons, ducks) were observed during any of the surveys. Additionally, there are a number of NDOW "protected" species that have been documented within the vicinity (4-mile buffer) of the project site, as stated in Appendix C, which could potentially be affected by project implementation absent avoidance measures provided in Section 7.

Because the location is situated in the Lahontan Valley in the regional vicinity of Pyramid Lake, Stillwater National Wildlife Refuge, Truckee River, and known rookeries for pelicans, cormorants, and ibis, NDOW has expressed concern about possible "pseudo lake effects" on wetland species that run on water in order to take off. This includes species such as grebes, cormorants, loons, and diving ducks, and possibly others. There is little known about the effects of solar farms on these and other avian species, but anecdotal and initial information from other facilities indicates that there is some direct impact to species, thought the extent is not thought to be very great. Particularly when considering existing mortality due to hunting and other anthropogenic activities. While not anticipated to be an important source of impact to these species, Section 7 provides measures to monitor and address important sources of project impacts related to these species.

Most of the indirect impacts to vegetation communities previously described can also affect wildlife. Wildlife may also be indirectly affected in the short-term and long-term by construction-related noise—which can disrupt normal activities and subject wildlife to higher predation risks—and adverse edge effects can cause degradation of habitat quality through the invasion of pest species. Breeding birds can be affected by short-term construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities. There is suitable habitat within the project area that could provide nesting habitat for raptors and songbirds protected by the MBTA. Indirect impacts from construction-related noise may occur to breeding wildlife if construction occurs during the breeding season (i.e., February 1 through September 15). Impacts from these indirect effects would be reduced through the avoidance and minimization measures provided in Section 7.

Indirect impacts may occur to big game species related to movement. Allowances will be made for wildlife movement through and around the project site in accordance with NDOW feedback. This is memorialized under Section 7 and will reduce these impacts.

7 AVOIDANCE MEASURES

Implementation of the proposed project would potentially result in impacts to vegetation communities, wildlife and jurisdictional resources, absent avoidance measures. Avoidance measures detailed below are designed to reduce these potential impacts.

Vegetation Communities

Typical construction best management practices (BMPs) will limit the spread of dust and runoff and by revegetating any temporarily disturbed areas with native plant communities would minimize the potential for invasive plant species. During construction, typical avoidance and minimization measures, such as having trash containers on site, a demarcated limit of work, and contractor education, will limit the potential for trash and other human disturbance.

Jurisdictional Resources

The potential on-site jurisdictional ephemeral drainages could be considered waters of the United States under the jurisdiction of ACOE. Impacts to jurisdictional ephemeral drainages would require a Section 404 permit from ACOE, and approval from the Nevada Department of Environmental Protection resource agency. Additionally, an Approved Jurisdictional Determination should be obtained from the ACOE if drainages within the study area are under ACOE jurisdiction.

Implementation of stormwater regulations and typical construction BMPs are expected to substantially control adverse indirect impacts (e.g., erosion, sedimentation, habitat conversion) during and following construction both adjacent and downstream from the study area. By incorporating methods to control erosion and runoff, including a Storm Water Pollution Prevention Plan (SWPPP) to meet National Pollution Discharge Elimination System (NPDES) regulations and incorporating BMPs during construction short- and long-term indirect impacts to off-site, adjacent jurisdictional waters would be reduced.

Nesting Birds

The applicant shall retain a qualified biologist to conduct pre-disturbance nesting bird surveys. Within 7 days of ground-disturbing activities associated with construction or grading that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically February through August in the project region, or as determined by a qualified biologist), the applicant shall have a single pre-construction survey conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act are present in the disturbance zone or within 300 feet (500 feet for raptors) of the disturbance zone. If nesting birds are found to be present, surveys shall continue until those within the disturbance zone or buffer area are finished nesting.

If active nests are found, clearing and construction in proximity to the nest shall be postponed or halted, at the discretion of the biologist, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barriers, and construction personnel shall be instructed on the sensitivity of nest areas.

Avian Collisions and Strandings

To address concerns pertaining to avian collisions and strandings due to potential pseudo lake-effect, the project will conduct the following avian monitoring during construction and operations:

1. Implement a Worker Response Reporting System (WRRS). A WRRS will provide a means of recording and collecting information on incidental bird species found dead, injured, or stranded within the Project area by site personnel. The WRRS will be used by site personnel who discover bird carcasses during construction and routine maintenance activities. Site personnel will be provided a set of standardized instructions to follow in response to wildlife incidents in the Project.
2. In accordance with the WRRS, during construction, site personnel will notify the Project Biologist to collect the following data on the incidentally detected avian wildlife: species, date, time, location (e.g., nearest Project structure), and how the animal died, if known. Results shall be reported to NDOW on a quarterly basis unless listed species are involved. During operations, site personnel will collect the same data, take photographs, and notify the Project's environmental manager, who will then notify NDOW on a quarterly basis unless listed species are involved. In the event of an injury or stranding, NDOW will be contacted for instruction on how to handle the situation. Workers will be trained on the WRRS during the Worker Environmental Awareness Program. The WRRS shall be used for the life of the Project. To accommodate these requirements, a Project Biologist shall be on retainer throughout the construction period, and one should be available during the life of the Project to assist in avian identifications, data collection, and identification of causation of death or injury, and implementing the WRRS.

3. A plan will be developed that provides a direction on what to do if impacts to select species does become apparent. This plan will include or address the following:
   a. The plan will identify the focal species – it is anticipated that this list will include grebes, cormorants, pelicans, diving ducks, and other select waterbirds and raptors
   b. The plan will identify tiered thresholds for implementing mitigation for each species
   c. The plan will identify where to mitigate for each species and the method. Suggestions made by NDOW include contributing to the Spring Valley Project or identifying additional wetland mitigation sites in the reginal vicinity with the purpose of enhancing the affected populations through enhanced nesting or foraging habitat.
   d. The plan will identify the amount of a contingency fund to support programs if necessitated by eventual impacts to species.
   e. The plan will identify thresholds for adaptive monitoring
   f. The plan will identify the parameters for a contingency plan if mitigations are not enough to address large amounts of impacts to species.

Big Game Movement Allowances

To address concerns pertaining to wildlife movement – particularly mule deer and pronghorn antelope – the project will provide for movement in and around the site. Specifically, lighting on the site will be kept to the minimum amount required for safety and security. Additionally, roads leading to the site will not be fenced, and security fencing around the project area will include gaps between large blocks in order to provide for movement between them. These gaps will be at least 6 feet wide. It is anticipated that two gaps will be required.

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9 REFERENCES

ACOE (U.S. Army Corps of Engineers). 1987. *Corps of Engineers Wetland Delineation Manual.* Online ed. Environmental Laboratory, Wetlands Research Program Technical Report Y-87-1. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station. January 1987. Accessed June 2012. http://www.fedcenter.gov/Bookmarks/index.cfm?id=6403&pge_id=1606.

ACOE. 2008a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* Environmental Laboratory, ERDC/EL TR-08-28. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center. September 2008. Accessed June 2012. http://el.erdc.usace.army.mil/elpubs/pdf/trel08-28.pdf.

ACOE. 2008b. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual*. Cold Region Research and Environmental Laboratory, ERDC/CRREL TR-08-12. Hanover, New Hampshire: U.S. Army Engineer Research and Development Center. August 2008.

ACOE and EPA (U.S. Environmental Protection Agency). 2008. "Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States*." December 2, 2008. http://water.epa.gov/lawsregs/guidance/wetlands/upload/2008_12_3_wetlands_CWA_Jurisdiction_Following_Rapanos120208.pdf.

AOU (American Ornithologists' Union). 2015. "Checklist of North and Middle American Birds." 56th Supplement. Accessed February 10, 2016. http://checklist.aou.org/taxa/.

Bell et. al., 2005. Geologic Map of the Wadsworth Quadrangle, Washoe County Nevada. Accessed December 5, 2014.

Bing Maps. 2014. [aerial photograph]. 1:200 scale. 2014.

Crother, B.I. (committee chair). 2012. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding*. Seventh Ed. Herpetological Circular No. 39. Prepared by the Standard English and Scientific Names Committee. Shoreview, Minnesota: Society for the Study of Amphibians and Reptiles. August 2012.

EPA (U.S. Environmental Protection Agency). 2014. *Watershed Assessment, Tracking & Environmental Results (WATERS)*. Last updated February 05, 2014. Accessed January 2015. http://www.epa.gov/waters/tools/WATERSKMZ/WATERSKMZ.html.

Fraga, Naomi S. 2012. “A revision of *Erythranthe montioides* and *Erythranthe palmeria* (Phrymaceae), with descriptions of five new species from California and Nevada, USA.” Aliso 30(1):49–68.

Google Earth. 2014. [aerial photograph]. 1:200 scale.

Grossman, D.H., D. Faber-Langendoen, A.S. Weakley, M. Anderson, P. Bourgeron, R. Crawford, K. Goodin, S. Landaal, K. Metzler, K.D. Patterson, M. Pyne, M. Reid, and L. Sneddon. 1998. *International Classification of Ecological Communities: Terrestrial Vegetation of the United States*. Vol. 1, *The National Vegetation Classification System: Development, Status, and Applications*. Arlington, Virginia: The Nature Conservancy.

Jepson Flora Project. 2016. *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California*. Accessed April 15, 2016. http://ucjeps.berkeley.edu/ interchange/I_status_1+2.html.

Nevada Natural Heritage Program. Department of Conservation and Natural Resources. Species information search for Washoe County. http://heritage.nv.gov/species_info. Accessed November 10 and 11, 2017.

NatureServe Explorer. 2015. *Descriptions of Ecological Systems*. Data current as of October 2015. NatureServe, Arlington, VA. Accessed December 27, 2016. http://www.natureserve.org.

Peterson, E. B. 2008. International Vegetation Classification Alliances and Associations Occurring in Nevada with Proposed Additions. Nevada Natural Heritage Program, Carson City, Nevada.

USDA NRCS (U.S. Department of Agriculture, Natural Resources Conservation Service). 1994. “Digital general soil association map developed by the National Cooperative Soil Survey” [vector digital data]. STATSGO Soils website. Accessed January 8, 2014. http://www.epa.gov/esd/land-sci/nv_geospatial/pages/nvgeo_gis4_statsgo_md.htm.

USDA. 2016a. Web Soil Survey. USDA Natural Resources Conservation Service, Soil Survey Staff. Accessed April 18, 2016. http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

USDA. 2016b. PLANTS Database. USDA Natural Resources Conservation Service. http://plants.usda.gov/.

USGS (U.S. Geological Survey). 2014. 7.5-Minute Fernley West, Olinghouse, and Wadsworth Topographic Quadrangles.

USGS, Gap Analysis Program (GAP). May 2011. National Land Cover, Version 2. https://gapanalysis.usgs.gov/gaplandcover/data/.

USFWS (U.S. Fish and Wildlife Service) 2014. *National Wetland Inventory.* Last updated March 22, 2013. Accessed April 2013. http://www.fws.gov/wetlands/Data/Mapper.html.

USFWS. 2016. "Critical Habitat and Occurrence Data" [map]. Accessed August 2016. https://ecos.fws.gov/ipac/

USFWS. 2017. "Information for Planning and Consultation". Accessed November 13, 2017 http://www.fws.gov/data.

Washoe County. 2010. Washoe County Master Plan. Executive Summary. Adopted September 9, 2010. Accessed October 22, 2014. http://www.washoecounty.us/comdev/planning_docs.

Washoe County 2012. *Master Plan Truckee Canyon Area Plan*. Adopted as part of the Washoe County Master Plan. September 27, 2012. Accessed October 22, 2014. http://www.washoecounty.us/comdev_files/cp/truckee_canyon_area_plan.pdf.

Weatherbase 2014. Historical Weather for Wadsworth, Nevada. Accessed December 2014. http://www.weatherbase.com.

Wilson, D.E., and D.M. Reeder, eds. 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference.* 3rd ed. Online version. Baltimore, Maryland: Johns Hopkins University Press. Accessed April 2015. http://www.bucknell.edu/msw3/.

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APPENDIX A

Plant Species Observed On Site

APPENDIX A
Plant Species Observed On Site

VASCULAR SPECIES

DICOTS

ASTERACEAE—SUNFLOWER FAMILY

Artemisia spinescens—bud sagebrush
Artemisia tridentata—big sagebrush
Chrysothamnus viscidiflorus—yellow rabbitbrush
Ericameria sp.—rabbitbush
Chaenactis sp.—pincushion

BORAGINACEAE—BORAGE FAMILY

Amsinckia sp.—fiddleneck

CHENOPODIACEAE—GOOSEFOOT FAMILY

* *Halogeton glomeratus*—saltlover
* *Salsola tragus*—prickly Russian thistle
Atriplex confertifolia—shadscale saltbush

GERANIACEAE—GERANIUM FAMILY

* *Erodium cicutarium*—redstem stork's bill

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum davidsonii—Davidson's buckwheat
Eriogonum deflexum—flatcrown buckwheat

SARCOBATACEAE—NO COMMON NAME

Sarcobatus vermiculatus—greasewood

MONOCOTS

POACEAE—GRASS FAMILY

* *Bromus tectorum*—cheatgrass
Stipa hymenoides—Indian ricegrass

* signifies introduced (non-native) species

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APPENDIX B

Wildlife Species Observed On Site

APPENDIX B
Wildlife Species Observed On Site

BIRDS

FALCONS

FALCONIDAE—CARACARAS AND FALCONS

Falco mexicanus—prairie falcon
Falco sparverius—American kestrel

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Aquila chrysaetos—golden eagle
Buteo jamaicensis—red-tailed hawk
Buteo regalis—ferruginous hawk
Circus cyaneus—northern harrier

JAYS, MAGPIES, AND CROWS

CORVIDAE—CROWS AND JAYS

Corvus corax—common raven

LARKS

ALAUDIDAE—LARKS

Eremophila alpestris—horned lark

WRENS

TROGLODYTIDAE—WRENS

Salpinctes obsoletus—rock wren

INVERTEBRATES

BUTTERFLIES

PIERIDAE—WHITES AND SULFURS

Pieris rapae—cabbage white

MAMMALS

UNGULATES

CERVIDAE—DEERS

Odocoileus hemionus—mule deer

REPTILES

LIZARDS

PHRYNOSOMATIDAE—IGUANID LIZARDS

Uta stanburiana—common side-blotched lizard

APPENDIX C

Nevada Department of Wildlife Analysis Response

STATE OF NEVADA

DEPARTMENT OF WILDLIFE

6980 Sierra Center Parkway, Suite 120
Reno, Nevada 89511
(775) 688-1500 • Fax (775) 688-1495

BRIAN SANDOVAL
Governor

TONY WASLEY
Director

ELIZABETH O'BRIEN
Deputy Director

JACK ROBB
Deputy Director

September 22, 2016

Brock Ortega
Sr. Wildlife Biologist
Dudek
605 Third St.
Encinitas, California 92024

Re: Dodge Flats Solar

Dear Brock Ortega:

I am responding to your request for information from the Nevada Department of Wildlife (NDOW) on the known or potential occurrence of wildlife resources in the vicinity of the Dodge Flats Solar located in Washoe County, Nevada. In order to fulfill your request an analysis was performed using the best available data from the NDOW's wildlife occurrences, raptor nest sites and ranges, greater sage-grouse leks and habitat, and big game distributions databases. No warranty is made by the NDOW as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data. These data should be considered **sensitive** and may contain information regarding the location of sensitive wildlife species or resources. All appropriate measures should be taken to ensure that the use of this data is strictly limited to serve the needs of the project described on your GIS Data Request Form. Abuse of this information has the potential to adversely affect the existing ecological status of Nevada's wildlife resources and could be cause for the denial of future data requests.

To adequately provide wildlife resource information in the vicinity of the proposed project the NDOW delineated an area of interest that included a four-mile buffer around the project area provided by you on Wednesday, September 21, 2016. Wildlife resource data was queried from the NDOW databases based on this area of interest. The results of this analysis are summarized below.

Big Game – Occupied mule deer distribution exists throughout the entire project area and portions of the four-mile buffer area. Occupied pronghorn antelope distribution exists within portions of the project area and four-mile buffer area. Occupied bighorn sheep distribution exists outside of the project area within portions of the four-mile buffer area. No known occupied elk distribution exists in the vicinity of the project area. Please refer to the attached maps for details regarding big game distributions relative to the proposed project area.

Greater Sage-Grouse – Greater sage-grouse habitat in the vicinity of the project area has primarily been classified as General habitat by the Nevada Sagebrush Ecosystem Program (http://sagebrusheco.nv.gov). Priority habitat also exists in the vicinity of the project area. Please refer to the attached maps for details regarding greater sage-grouse habitat relative to the proposed project area. There are no known radio-marked greater sage-grouse tracking locations in the vicinity of the project area. There are no known greater sage-grouse lek sites in the vicinity of the project area.

Raptors – Various species of raptors, which use diverse habitat types, may reside in the vicinity of the project area. American kestrel, bald eagle, barn owl, burrowing owl, Cooper's hawk, ferruginous hawk, golden eagle, great horned owl, long-eared owl, merlin, northern goshawk, northern harrier, northern saw-whet owl, osprey, peregrine falcon, red-tailed hawk, rough-legged hawk, sharp-shinned hawk, short-eared owl, Swainson's hawk, turkey vulture, and western screech owl have distribution ranges that include the project area and four-mile buffer area. Furthermore, bald eagle, Cooper's hawk, golden eagle, northern harrier, osprey, red-tailed hawk, and Swainson's hawk have been directly observed in the vicinity of the project area.

Raptor species are protected by State and Federal laws. In addition, bald eagle, burrowing owl, California spotted owl, ferruginous hawk, flammulated owl, golden eagle, northern goshawk, peregrine falcon, prairie falcon, and short-eared owl are NDOW species of special concern and are target species for conservation as outlined by the Nevada Wildlife Action Plan. Per the *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance* (United States Fish and Wildlife Service 2010) we have queried our raptor nest database to include raptor nest sites within ten miles of the proposed project area. There are 48 known raptor nest sites within ten miles of the project area. Please refer to the appendix for details regarding these raptor nest sites.

Other Wildlife Resources

There are no water developments in the vicinity of the project area. Additional species have also been observed in the vicinity of the project area. Please refer to the appendix for details regarding these species.

The proposed project area may also be in the vicinity of abandoned mine workings, which often provide habitat for state and federally protected wildlife, especially bat species, many of which are protected under NAC 503.030. To request data regarding known abandoned mine workings in the vicinity of the project area please contact the Nevada Division of Minerals (http://minerals.state.nv.us/).

The above information is based on data stored at our Reno Headquarters Office, and does not necessarily incorporate the most up to date wildlife resource information collected in the field. Please contact the Habitat Division Supervising Biologist at our Western Region Reno Office (775.688.1500) to discuss the current environmental conditions for your project area and the interpretation of our analysis. Furthermore, it should be noted that the information detailed above is preliminary in nature and not necessarily an identification of every wildlife resource concern associated with the proposed project. Consultation with the Supervising Habitat biologist will facilitate the development of appropriate survey protocols and avoidance or mitigation measures that may be required to address potential impacts to wildlife resources.

Mark Freese - Western Region Supervising Habitat Biologist (775.688.1145)

Federally listed Threatened and Endangered species are also under the jurisdiction of the United States Fish and Wildlife Service. Please contact them for more information regarding these species.

If you have any questions regarding the results or methodology of this analysis please do not hesitate to contact our GIS office at (775) 688-1439.

Sincerely,

Bonnie Weller

GIS Specialist/Biologist III
Nevada Department of Wildlife
GIS Section
(775) 688-1439
bweller@ndow.org

Appendix A: Raptor Nest Sites Table

Probable Use	Last Check	Last Active	Township/Range/Section
Burrowing Owl	3/27/1987		21 0200N 0250E 003
Buteo	5/12/1975	5/12/1975	21 0210N 0220E 002
Buteo	6/19/1979	6/19/1979	21 0200N 0240E 003
Buteo	6/20/1994		21 0200N 0240E 004
Buteo	6/20/1994		21 0200N 0240E 013
Buteo	6/23/2007	6/23/2007	21 0210N 0220E 002
Buteo	5/22/2014	5/22/2014	
Buteo/Corvid	5/22/2014	5/22/2014	
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
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Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Buteo/Corvid	5/22/2014		
Eagle	5/12/1975		21 0220N 0220E 028
Eagle	3/26/1976	3/26/1976	21 0200N 0230E 025
Eagle	5/26/1979	5/26/1979	21 0200N 0230E 021
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle	5/22/2014		
Eagle/Buteo	5/22/2014	5/22/2014	
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Eagle/Buteo	5/22/2014		
Falcon - Confirmed	3/26/1976	3/26/1976	21 0200N 0230E 021
Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 026
Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 026

Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 027
Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 027
Falcon - Probable	3/26/1976	3/26/1976	21 0200N 0230E 028

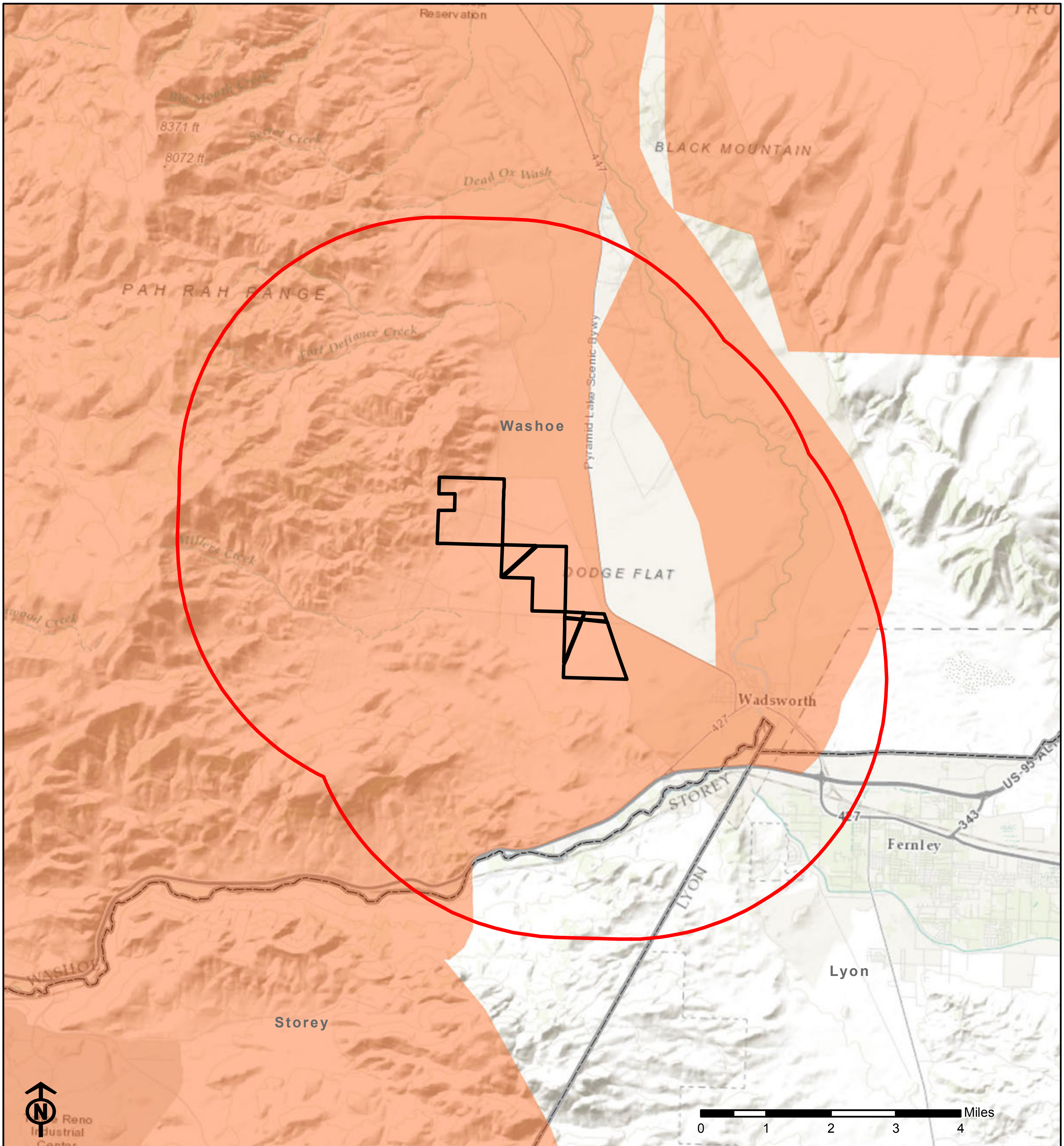
Appendix B: Other Wildlife Species Table

Common Name	ESA	State	SWAP SoCP
American robin		Protected	
Audubon's warbler		Protected	
Bewick's wren		Protected	
black bullhead			
black phoebe		Protected	
blue-gray gnatcatcher		Protected	
blue-winged warbler		Protected	
brown trout			
bullfrog			
bushtit		Protected	
California toad			Yes
Canada lynx			
Cassin's vireo		Protected	
chipping sparrow		Protected	
chisel-toothed kangaroo rat			
common carp			
common kingsnake			
common raven		Protected	
common sagebrush lizard			
common side-blotched lizard			
common yellowthroat		Protected	
cyprinid (unknown)			
desert horned lizard			Yes
desert woodrat			
downy woodpecker		Protected	
dusky flycatcher		Protected	
fathead minnow			
fox sparrow		Protected	
frog (unknown)			
golden-crowned kinglet		Protected	
gophersnake			
grasshopper mouse (unknown)			
gray flycatcher		Protected	
Great Basin collared lizard			Yes
Great Basin fence lizard			
Great Basin gophersnake			
Great Basin rattlesnake			
Great Basin whiptail			
greater sandhill crane			Yes
green-tailed towhee		Protected	
green sunfish			
Hammond's flycatcher		Protected	
hermit thrush		Protected	
house mouse			
house wren		Protected	

kangaroo rat (unknown)			
Lahontan cutthroat trout	Threatened		Yes
Lahontan redside			
largemouth bass			
lazuli bunting		Protected	
Lincoln's sparrow		Protected	
little pocket mouse			
long-nosed leopard lizard			Yes
MacGillivray's warbler		Protected	
Merriam's kangaroo rat			
mountain lion			
mountain sucker			
mountain whitefish			Yes
Nashville warbler		Protected	
Nevada side-blotched lizard			
North American deermouse			
northern desert horned lizard			Yes
northern flicker		Protected	
northern grasshopper mouse			
northern leopard frog		Protected	Yes
northern zebra-tailed lizard			
orange-crowned warbler		Protected	
Ord's kangaroo rat			
Pacific-slope flycatcher		Protected	
pale kangaroo mouse		Protected	Yes
quail (unknown)			
rainbow trout			
red-breasted nuthatch		Protected	
redside shiner			
ruby-crowned kinglet		Protected	
rufous hummingbird		Protected	Yes
Sacramento perch			
song sparrow		Protected	
southern grasshopper mouse			
southwestern willow flycatcher	Endangered	Endangered	Yes
speckled dace			
spotted towhee		Protected	
Steller's jay		Protected	
striped whipsnake			
sucker (unknown)			
Tahoe sucker			
terrestrial gartersnake			
Townsend's big-eared bat		Sensitive	Yes
Townsend's solitaire		Protected	
Townsend's warbler		Protected	
warbling vireo		Protected	
western fence lizard			
western mosquitofish			

western patch-nosed snake		
western pipistrelle		
western pond turtle		Yes
western tanager	Protected	
western wood-pewee		
white-crowned sparrow	Protected	
white-tailed antelope squirrel		
Wilson's warbler	Protected	
winter wren	Protected	
yellow-backed spiny lizard		
yellow-rumped warbler	Protected	
yellow warbler	Protected	
Yuma myotis		
zebra-tailed lizard		

ESA: Endangered Species Act Status
State: State of Nevada Special Status
SWAP SoCP: Nevada State Wildlife Action Plan (2012) Species of Conservation Priority



Project Area
Four Mile Buffer Area Boundary
Mule Deer Distribution

Dodge Flats Solar
Mule Deer Distribution

September 22, 2016

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.

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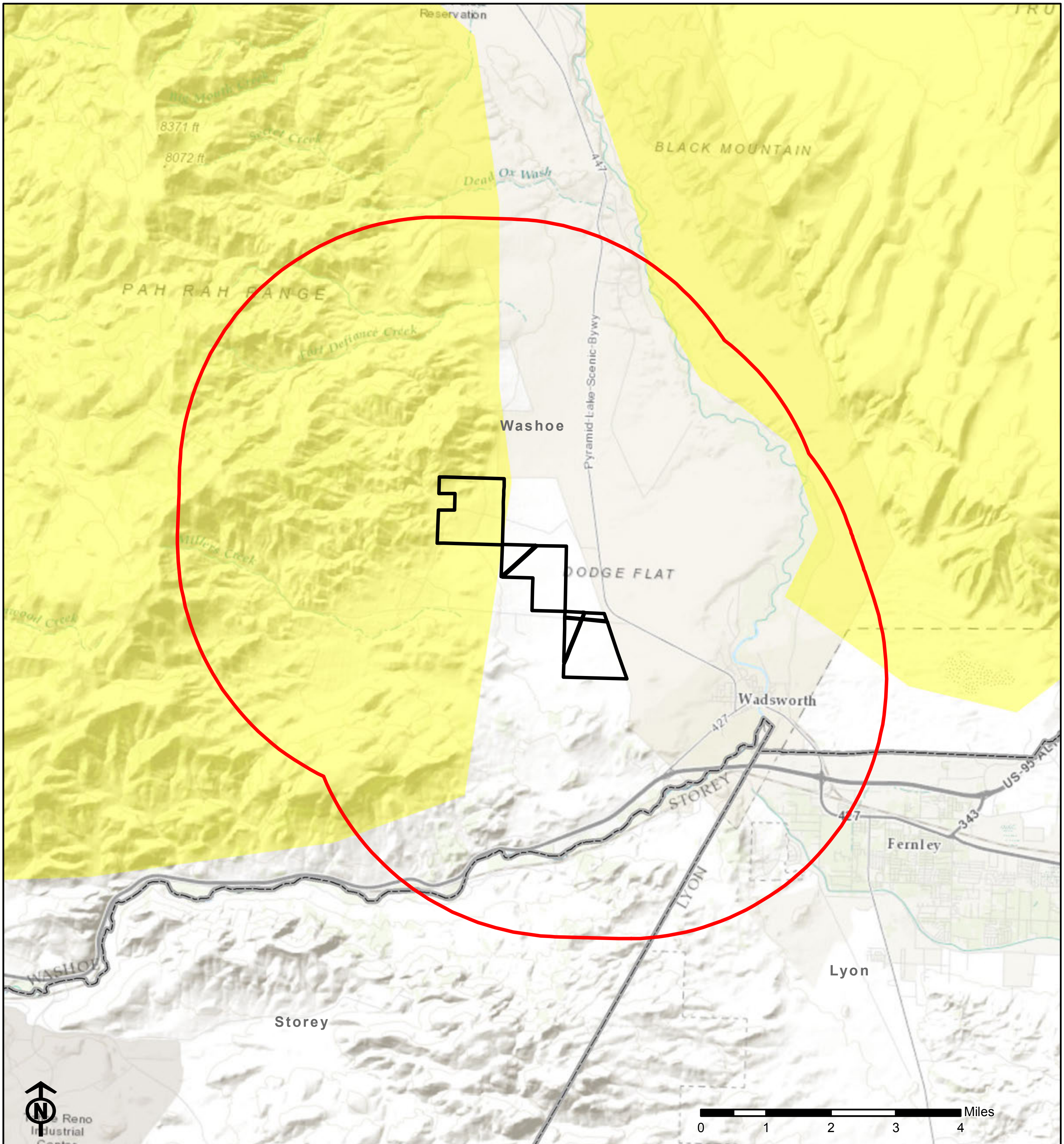

Project Area

Four Mile Buffer Area Boundary

Pronghorn Antelope Distribution

Dodge Flats Solar
Pronghorn Antelope Distribution

September 22, 2016

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.

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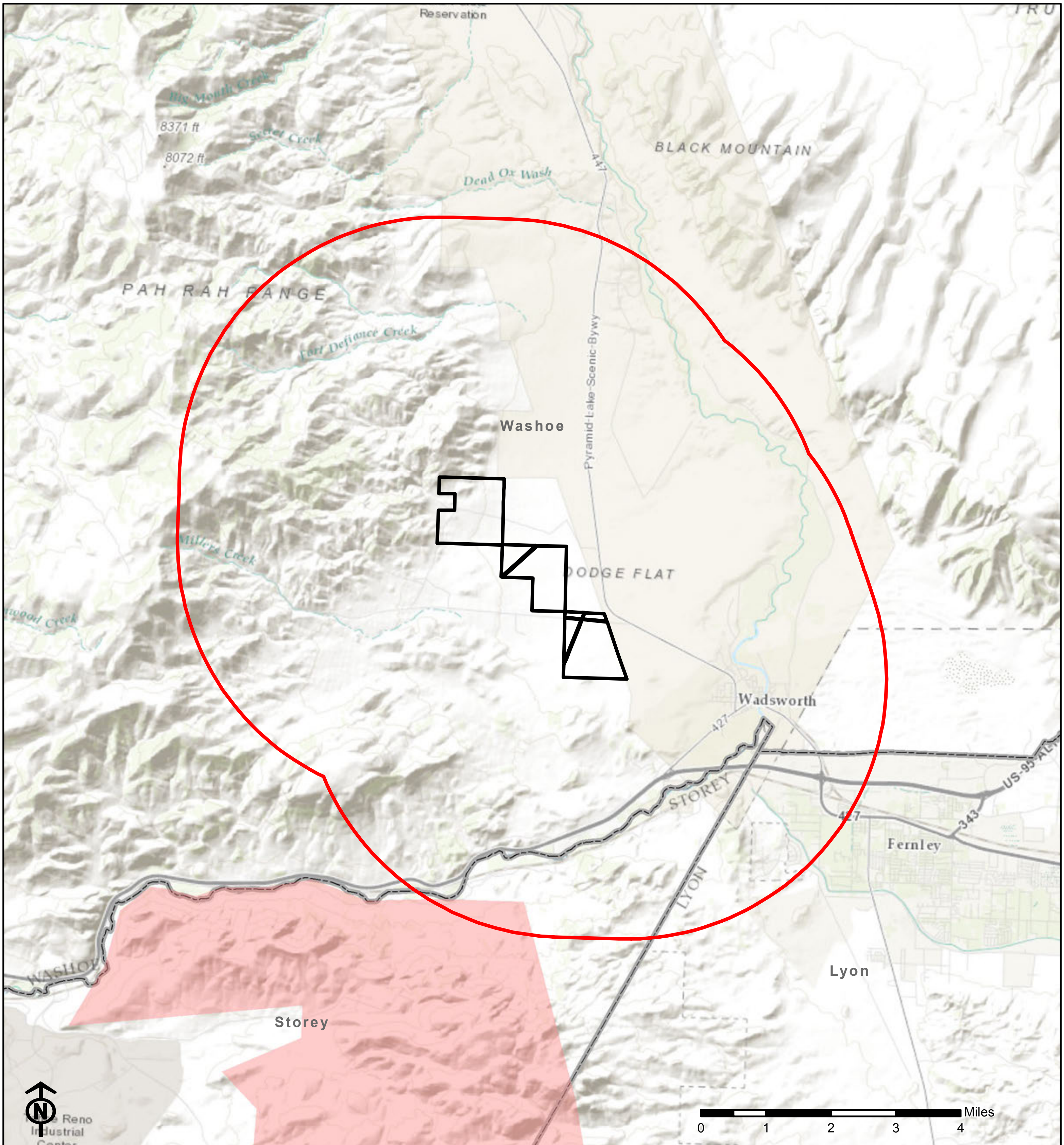

Project Area

Four Mile Buffer Area Boundary

Bighorn Sheep Distribution

Dodge Flats Solar
Bighorn Sheep Distribution

September 22, 2016

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.

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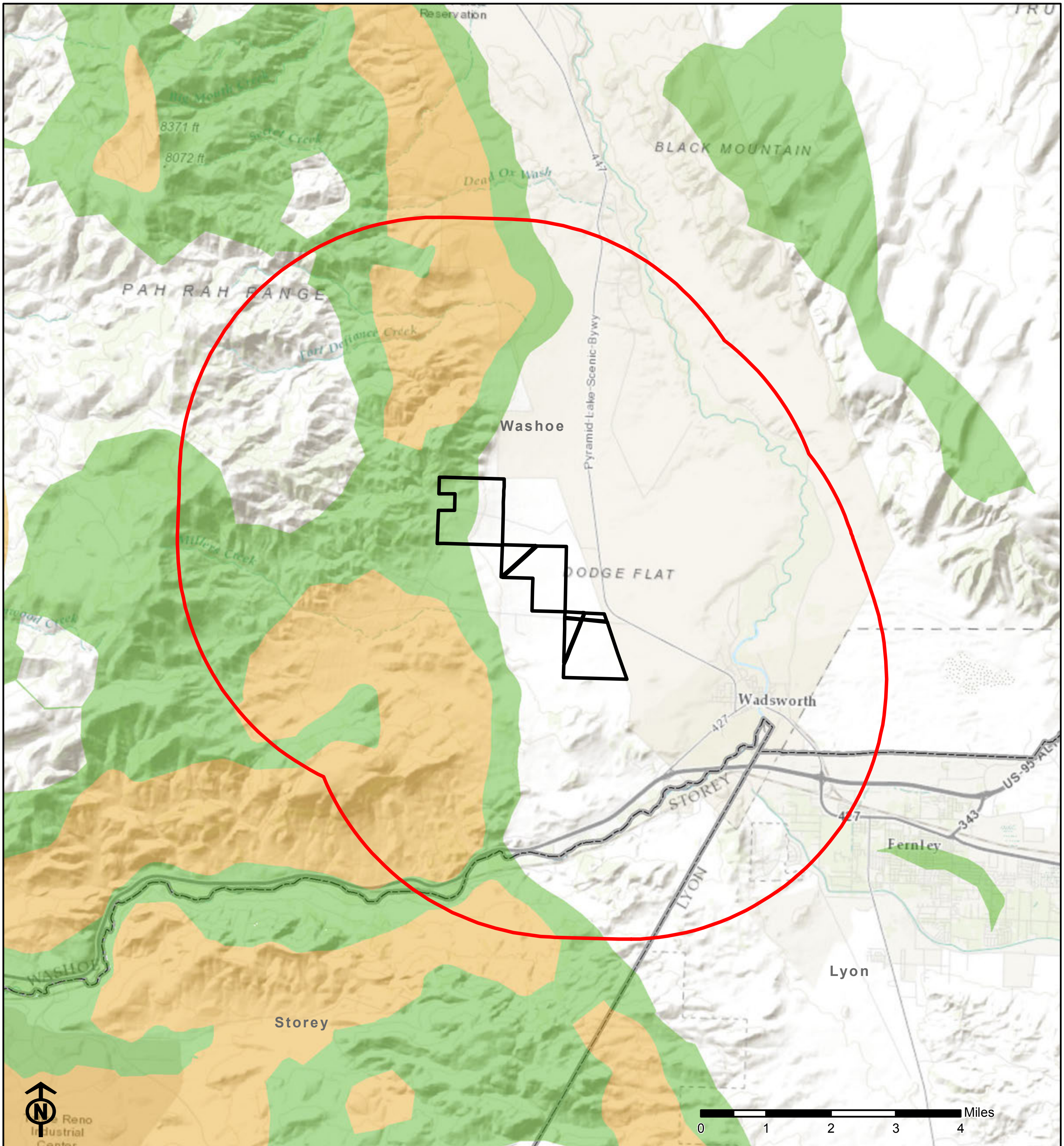

Project Area

Four Mile Buffer Area Boundary

Management

Core Habitat

Priority Habitat

General Habitat

Dodge Flats Solar
Greater Sage-Grouse Habitat

September 22, 2016

Projection: UTM Zone 11 North, NAD83

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MEMORANDUM

To:	Kelly Mullin, Senior Planner; Michael Wolf, Permitting and Enforcement Branch Chief – Washoe County
From:	David Hochart, Dudek, on behalf of Dodge Flat Solar, LLC
Subject:	Dodge Flat Solar Energy Center– Dust Control Measures
Date:	January 10, 2018
cc:	Eric Koster, Dodge Flat Solar LLC Jesse Marshall, Dodge Flat Solar LLC
Attachment(s):	N/A

It is our understanding that Washoe County would like to better understand Dust Control Measures (DCM's) that would be implemented during construction of the proposed Dodge Flat Solar Energy Center (Project). As you know, the Project is currently being processed with the County (Case #WSUP-17-0021). The purpose of this memorandum is to provide the County with a description of measures that will be implemented to reduce fugitive dust emissions associated with construction of the Project. This memorandum provides Dodge Flat Solar, LLC's general approach for implementing the DCM's, as well as the means of monitoring the effectiveness of the DCM's. It should be noted that the DCM's described in this memo will eventually form the basis of a more detailed Dust Control Plan, which will be written prior to construction, once the construction contractor is selected for the Project.

Dust Control Measures (DCM's)

Water Trucks

Water trucks will be utilized to apply water to areas to control fugitive dust as follows:

- On unpaved Project access roads and work areas;
- Prior to clearing a work area;
- On inactive stockpiles; and/or
- Prior to, during, or after earthmoving operations, such as transporting dirt, sand, or loose materials to or from the Project site.

The construction sites will be pre-watered as directed by the Dodge Flat Solar LLC designated representative. Loading activities will be accomplished with the bucket close to the truck when dumping to reduce fugitive dust, and water will be applied as necessary during loading.

Water trucks will be dedicated to the Project and available for operation during all work hours when construction-related activities are occurring, as necessary, to control fugitive dust. During active construction, Dodge Flat Solar LLC will maintain at least one water truck on site. If the number of water trucks cannot adequately control fugitive dust, Dodge Flat Solar LLC will provide additional water trucks or implement additional measures to control dust. If wind speeds become excessive and watering does not afford adequate dust control, Dodge Flat Solar LLC will implement additional, reasonable efforts, including shutting down mobile equipment or increasing watering to adequately control fugitive dust. Dust control would be considered inadequate if fugitive dust was observed leaving the Project limits for an extended period of time.

Dust Palliatives

Dust control during construction will be achieved primarily through the application of water, but in some instances and/or locations, Dodge Flat Solar LLC may deem the limited use of a chemical dust palliative or plant-based tackifier (hydromulch) advantageous. Areas that will be targeted for dust palliatives include roads regularly travelled by construction crews and inactive construction areas where crews have completed work. Dust palliatives or tackifiers will be environmentally safe; comply with federal, state, and local regulations; and will not produce a noxious odor or contaminate surface water or groundwater. Soil stabilizers may include FSB1000, Calcium Chloride, Chlor-Tex/Magnesium Chloride, Enviro-Tac II and Soil Sement.

Speed Limits

The speed limit of 15 mph for construction vehicles will be implemented on-site and on unpaved roads serving the Project. Dodge Flat Solar LLC will implement the Project speed limit by posting “Project Speed Limit 15 MPH” signs along unpaved access roads. In addition, the Project speed limit and the reasons for the speed limit will be included in the Project Environmental Awareness Training Program that will be provided to all Project personnel prior to working on the Project.

Tracking Controls

Dust can result from soil and debris being tracked onto paved surfaces, and the subsequent detachment by local and construction traffic. Dodge Flat Solar LLC will minimize tracking to reduce the potential for dust generation from adjacent paved surfaces by installing rock aprons or rattle plates at the intersections of dirt access roads and paved public roadways to clean the tires of equipment and vehicles prior to leaving the site. Dodge Flat Solar LLC will complete regular inspections to ensure that trac-out does not extend 25 feet or more from an active operation. In addition, streets will be swept at the conclusion of each workday when active operations cease if visible soil material is carried onto adjacent public streets.

Clearing and Grading

Clearing and grading activities during construction of the Project will be limited to designated areas and kept to the minimum necessary to safely construct the Project. Vegetation will be cut at ground level, where possible, to minimize the amount of disturbed soil. Clearing and grading is anticipated to be required throughout the solar array areas of the site. The amount of clearing and grading will be minimized to the extent feasible. In addition, sites with low soil moisture content that will be cleared, will be pre-watered in advance, as needed, to help control fugitive dust from leaving the work area.

Material Storage and Handling

Dodge Flat Solar LLC will not handle or store any material in a manner that results in excessive generation of dust. Topsoil and subsoil stockpiles maintained as a part of the Project will be sufficiently wetted to reduce wind-blown dust. If the crust created from wetting stockpiles is not sufficient to prevent wind erosion, additional treatment such as covering the stockpiles or applying a light tackifier may be required.

High-Wind Events

The Dodge Flat Solar LLC designated representative will monitor the weather forecasted by the National Weather Service for the Project area during the construction of the Project. If sustained wind speeds over 25 mph are predicted for the Project area and it is safe to do so, all disturbed areas or stockpiled materials will be pre-watered prior to the high-wind event to minimize the amount of fugitive dust that may be carried off site by high winds. The Dodge Flat Solar LLC designated representative will determine which areas are most susceptible to wind erosion and will advise on areas that require pre-watering.

Site Restoration

To stabilize soils, all disturbed soils and roads within the Project site that are subject to temporary impacts shall be stabilized and restored to pre-project grade in order to minimize the potential for dust generation by promoting natural revegetation re-growth.