Appendix D Pre-Design Soils Engineering Report Aubum O^{Pi}te



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February 9, 2010 OCTIDIE No. 1856.1

Mr. John Skielstud, General Manager Donnie Summit PUD 57827 Sherrit Late Soda Springs, CA 92-28

Subject FRE-DESIGN REPORT Doming Summa PCD Reserver Sues Nevada County, California

Dear Mr. Skjelstad,

Blockburn Consulting (BCD) in cooperation with Wagner & Bonsignore, prepared this Pre-Design Report to evaluate the feasibility of new reservoir sites for the Domer Summu Public Unlify District. We prepared this report in accordance with our agreement dated August 19, 2009.

Please call of you have questions on this report or require additional information. We appreciate this opportunity to serve you.

Smeerely.

BLACKIU RN CONSULTING E. Rick Sowers, P.U., C. E.G. Patrick Eiseber, CT 6 Engineering Geologist, Principal Settion Project Manager-Distribution Chemistry Leo Long, Ann. Dave Price (7).

PRE-DESIGN REPORT

Donner Summit PUD Reservoir Sites Nevada County, California

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INTRODUCTION

Blackburn Consulting (BCI), in cooperation with Wagner & Bonsignore, prepared this Pre-Design Report in evaluation of potential reservoir sites located near the community of Soda Springs in Nevada County, California. The purpose of this report is to assist the Donner Summit Public Utilities District (PUD) in evaluating the feasibility and preliminary construction costs of a new storage reservoir.

Eco:Logic and the PUD originally identified six potential reservoir sites within about 2.5 miles of the existing treatment plant. These sites were reviewed on October 1, 2009, by Rick Sowers (BCI) and Dave Price, Greg Matuzak and Gabe Aronow (Eco:Logic). Based on that review and consideration of other factors, Site #3 was selected as the preferred location, with Site #2 as an alternate.

SCOPE OF SERVICES

To prepare this report, BCI:

- Reviewed published geologic, seismic and topographic mapping and aerial photographs of the sites.
- Excavated six test pits at the preferred (Site #3) location.
- Conducted preliminary laboratory testing on samples obtained from the test pits.
- Developed conceptual designs, quantity estimates and preliminary costs for storage capacities of approximately 4, 8 and 12 million gallon (MG) sizes at both Site #2 and Site #3.

SITE AND PROJECT DESCRIPTION

The proposed sites (#2 and #3) are located approximately two miles northwest of Soda Springs and approximately one mile northwest of the PUD treatment plant. We show the site locations on Figure-1.

The preferred Site #3 is located on the south side of the Yuba River and is the closest site to the existing treatment plant. Site topography slopes gently to moderately west/southwest at about elevation 6400 ft. The surface vegetation is comprised of brush and numerous large pine/fir trees. Granitic rock outcrops are common throughout the site.

Site #2 is located on the north side of the Yuba River. This site is within a shallow, ephemeral swale that slopes south toward the Yuba River. The site elevation in the swale area is about 6400 feet and rises sharply to the north and east where numerous granitic rock outcrops are present. Surface vegetation outside of the swale area is comprised of brush and numerous large pine/fir trees.

The reservoir will store treated effluent discharged from the treatment plant during a short duration period (about 4-6 weeks) in late spring or early summer when biostimulation is suspected or noticed. Eco:Logic estimates a required storage capacity between 4 and 12 million gallons (about 12 -36 acre-feet). Maximum embankment height will be less than 25 ft to avoid state Division of Safety of Dams jurisdiction. We expect a plastic liner will be required to control seepage losses through the reservoir sides and base. The borrow material would be obtained primarily from within the reservoir area.

GEOLOGIC SETTING

Published geologic mapping¹ shows the sites to be underlain by Quaternary glacial deposits and/or Mesozoic granitic rock. Site #2 is shown to be underlain primarily by glacial deposits and Site #3 by granitic rock.

The glacial deposits are mostly unconsolidated till, moraine and outwash deposits comprised of poorly sorted sand, silt, gravel and cobbles with scattered boulders. The thickness of this unit varies but is generally less than 5 to 10 ft on slopes in the project area.

The granitic rock is mostly granodiorite of the Sierra Nevada batholith. Where exposed, it is typically jointed and/or fractured, with a predominant northwest and northeast trending fracture pattern. Some areas of exposed rock are smoothed and rounded from glacial scouring.

We show the regional geology on Figure 2 and photos of typical conditions at Site #3 in Appendix B.

SOIL PROFILE

USDA soil mapping² indicates that the soil cover at both sites is relatively thin, generally has a low shrink-swell potential (based on small quantities of clay soils), and is well-drained (does not retain an excessive amount of moisture). Our reconnaissance confirms these general soil conditions. We show the general distribution of soils from the soil survey on Figure 3.

We summarize the soil conditions in Table 1. In general, Site #2 contains predominately gravelly and cobble loam over glacial till, and Site 3 mostly cobbly loam over granitic rock.

¹California Division of Mines and Geology, "Geologic Map of the Chico Quadrangle", scale 1:250,000, 1992.

² USDA Web Soil Survey 2.0, Tahoe National Forest Area, California, 2009.

GENERALIZED SOIL UNITS – DONNER SUMMIT PUD SITES*										
Map Unit	Constituent Soil Types	General Soil Type	Approximate Soil Depth	Drainage	Notes					
TIE (Site 2)	Rock outcrop, granitic- Tinker	Very cobbly sandy loam overlying cemented glacial till	4-5 feet	Well drained	60% soils, 20% rock outcrop. High rock fragment content and areas of shallow water. Some shallow rock.					
RSE (Site 3)	Tinker-Rock outcrop, granitic	Exposed rock or cobbly sandy loam over rock	2 to 4 feet	Well drained (except in outcrop)	45% rock outcrop, 45% soils. High rock fragment content. Some shallow hard rock. Shallow water in some locations.					

TABLE 1

* Soil Survey, Tahoe National Forest Area, Version 2.0, 2002

GROUNDWATER

For both sites, we expect groundwater to occur above the soil/rock interface, generally as perched groundwater of limited depth and extent and within rock fractures. Perched groundwater is more likely to occur in the flatter, low-lying areas and within adjacent drainages, particularly during and shortly following periods of wet weather and snowmelt runoff.

Groundwater occurrence within fractured/jointed granitic rock will be sporadic. We did not observe springs/seeps as part of this study (October 2009), although these may occur seasonally where the soil/rock interface or saturated rock fractures daylight onto slopes.

FAULTING AND SEISMICITY

For the purpose of fault activity classification, faults are often grouped into the categories shown in Table 2 below.

FAULT CLASSIFICATION							
Recency of Movement (Geologic Time)	Description						
Historic	Displacement during historic time (approximately the last 200 years)						
Holocene	Displacement has occurred within the last 11,000 years						
Late Quaternary	Displacement has occurred within the last 700,000 years but evidence of Holocene activity is lacking						
Quaternary	Evidence of displacement within the last 1.6 million years						
Pre-Quaternary	No recognized evidence of displacement in Quaternary time						

In Table 3, we provide the distance between the study area and recognized Historic, Holocene, and Late Quaternary faults within approximately 100 km of the study area (a conventional search distance for faults that may cause significant ground shaking). Maximum earthquake magnitudes (moment magnitude) are also shown and are based on seismological data such as maximum historic earthquakes and on geologic data such as fault length and fault displacement parameters. The faults listed have the greatest potential for impacting the study area if they were to rupture. We attach a Regional Fault Map as Figure 4.

HISTORIC, HOLOCENE, and LATE QUATERNARY FAULTS Within 63 Miles (100 km) of Study Area									
Fault Name	Approx. Distance mi (km) and Direction	(Mmax) ¹	Current Classification						
Mohawk Valley (Zone)	11.3 (18.2) N	7.3	Late Quaternary (Possible Holocene)						
Dog Valley (Stampede Valley)	13.1 (21.1) NE	6.5	Historic						
North Tahoe	22.2 (35.7) E	6.5	Holocene						
Genoa	38.1 (61.3) SE	6.9	Holocene						
Foothills Fault System (closest branch)	39.8 (64.1) W	6.5	Late Quaternary (with Historic and Holocene segments)						
Honey Lake	49.0 (78.9) N	6.9	Holocene						
Antelope Valley	58.5 (94.1) SE	6.7	Holocene						

TABLE 3

¹ Maximum Moment Magnitude (Blake, 2000, Mualchin, 1996, and Cao, 2003)

The closest fault considered to be "active" (evidence of Holocene displacement) is the Dog Valley (or Stampede Valley) Fault. Two large earthquakes have occurred in historic time

along the inferred trace of this fault. These earthquakes were of magnitude 6.0 and occurred in 1948 and 1966, with the 1966 earthquake epicenter being in the Truckee area.

The study area is in an area with moderate historical seismicity. Toppozada³ shows that the site vicinity has experienced a few magnitude 5.0-5.4 earthquakes since 1869. More significant earthquakes have occurred further to the east (including the earthquakes on the Dog Valley Fault). None are recorded as causing significant damage in the vicinity of the sites.

SUBSURFACE CONDITIONS

BCI observed and logged six test pits (TP-1 through TP-6) at Site #3. Figure 3 shows the approximate pit locations. Our excavation subcontractor used a Case 580K backhoe equipped with 18 inch wide digging bucket to excavate the pits. We include soil descriptions and other information pertaining to each test pit in Appendix A, and photos of each pit in Appendix B.

The test pits encountered mostly silty sand with gravel, cobbles and boulders to depths of 2-5 ft, underlain by decomposed to intensely weathered granitic rock. The backhoe was able to excavate to depths of 2.5-6 ft before encountering essential refusal in relatively hard rock. No free groundwater was encountered in any of the test pits (excavated in October 2009).

Site #2 was not included in the scope of exploration for this study. Our site review suggests that this site has a thicker overburden cover than Site #3, as fewer rock outcrops are present within this area. This is consistent with gravelly loam over coarse, glacial till/outwash deposits. We estimate the depth to granitic bedrock at Site #2 to be between 5 and 10 ft below ground surface.

LABORATORY TESTS

We performed grain size analysis and maximum dry density tests on representative soil samples from the Site #3 test pits. The results show the soils contain 10-15% fines (passing No. 200 mesh sieve) and class as "GP-GM" and "SM" per Unified Soil Classification System. The maximum dry density is 130 pcf at 8% optimum moisture. We attach the laboratory test reports in Appendix A.

CONCLUSIONS

We make the following conclusions based on the above data.

³ Toppozada, et al., "Epicenters of and Areas Damaged by $M \ge 5$ California Earthquakes, 1800 to 1999", 2000.

- Both Sites #2 and #3 have a relatively shallow soil cover over granitic bedrock and/or glacial deposits. Support for new embankment, less than 25 ft in height, appears generally available within native, undisturbed soils. For preliminary design, assume general foundation support within native materials at a depth of 1-2 ft, with typical soil compaction (98% of ASTM D698) achieved at this level. Some additional subexcavation and replacement as compacted fill may be necessary for foundation preparation, depending on the degree of coarse material and loose nature of the soils.
- 2. For general embankment stability, assume a keyway near the toe of the fill, approximately 15 ft wide and 5 ft deep.
- 3. The materials at Site #3 can generally be excavated with heavy duty excavating equipment to depths of about 5-7 ft. In some areas, however, hard, granitic rock is present near the surface and rock excavation (without blasting) may be less than depth 5 ft. Some borrow may need to be obtained outside the Site #3 reservoir footprint depending on final reservoir size and location.
- 4. We did not conduct subsurface exploration at Site #2 but our preliminary review suggests that excavation will be easier at this site. We estimate that excavations to 5-7 ft below ground surface can be achieved with typical excavating equipment.
- 5. The embankment will be a rockfill section comprised of coarse, granular soil with cobbles and fragments of weathered bedrock. Embankment slopes of 2H:1V (downstream) and 3H:1V (upstream) are reasonable for preliminary design.
- 6. At both sites, some material screening may be required to exclude large boulders from the embankment and develop a processed bedding material for the liner.
- 7. In general, shallow groundwater does not appear to be a significant consideration in design or construction. However, perched groundwater within the shallow soils may require treatment for construction during spring or early summer months.
- 8. We did not observe evidence of significant geologic hazards such as landsliding, active faulting, springs, subsidence or flooding at the sites. Some loose, saturated, granular soil may be susceptible to liquefaction, however, both sites are underlain at shallow depth by granitic rock which is not susceptible to liquefaction; hence, we do not consider soil liquefaction to be a significant hazard for this project.
- 9. We expect the base of the reservoir will require a liner to reduce seepage into the coarse glacial deposits or fractured rock. A HDPE liner is recommended for preliminary design.

CONCEPTUAL DESIGN AND COST ESTIMATES

Wagner & Bonsignore developed preliminary designs for reservoir sizes of approximately 4, 8 and 12 MG at both Sites #2 and #3, based on the developed data and the criteria presented above. These designs assume an 18 inch outlet pipe, encased in concrete, at the base of the embankment,

and a simple overflow pipe for spillway considerations. Allowance is made for a service road around the reservoir and a diversion ditch to direct surface runoff around the reservoir.

We estimate that embankment excavation at Site #2 will involve less bedrock than at Site #3; the lower unit costs for Site #2 embankment construction reflect this assumption. The depth of foundation stripping is also somewhat greater at Site #2 to reflect the estimated deeper soil cover.

The conceptual designs and cost estimates, as developed by W&B, are presented in Appendix C. We summarize the reservoir options below in Table 4:

Reservoir Options										
Site	Operating Storage Capacity		Max Embankment	Total Earthwork	Cost Est. (Rounded,					
	MG	Ac-ft	Height (ft)*	(cy)	\$M)					
	4.3	13.2	13	12,800	1.26					
2	8.8	26.9	17	20,400	1.41					
	11.6	35.6	19	24,400	1.60					
	4.2	12.8	15	12,600	1.26					
3	8.4	25.9	19	20,800	1.51					
	12.6	38.6	23	28,300	1.73					

TABLE	4
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* vertical distance from lowest toe elevation to maximum storage elevation

NEXT-STEP STUDY

For either site, the next step will include detailed topographic mapping (based on ground targets and aerial photography) and preliminary subsurface exploration/testing at Site #2 to confirm the feasibility and assumptions made for this study. After site selection and definition of reservoir size and footprint, additional exploration and testing will be required for final design and preparation of plans, specifications and estimates (PS&E) for project bidding and construction. The design-level exploration will include additional test pits and possible test borings. Laboratory testing will include materials classification, natural and remolded strength tests (with possible triaxial shear tests), soil permeability and compaction tests.

LIMITATIONS

BCI performed services in accordance with generally accepted geotechnical engineering principles and practices currently used in this area. Do not use or rely upon this report for different locations or improvements without the written consent of BCI. We do not warranty our services.

BCI based this report on the current site conditions and preliminary exploration at Site #3 only. We assume the soil, rock and groundwater conditions observed in our test pits are representative of the subsurface conditions on the site. Actual conditions between the test pits could be different. Further investigation, including test pits and/or borings, laboratory testing and engineering analysis, is required for final design of a selected site.

We present the logs of our test pits in Appendix A. The lines designating the interface between soil/rock types are approximate. The transition between soil/rock types may be abrupt or gradual. Our recommendations are based on the final logs, which represent our interpretation of the field logs and general knowledge of the site and geologic conditions.

Figure 1 – Vicinity Map Figure 2 – Regional Geologic Map Figure 3 – Soils Map Figure 4 – Regional Fault Map











Test Pit Logs Legend to Logs Laboratory Test Results



	LOG OF TEST PIT TP1								
Date Excavated:	10/16/09 Logge	ed by:	RCP	Depth	to W	ater	(ft): _	N/	/A
Equipment:	CASE 580C Surface	ce Elevation	(ft): <u>~6396</u>	Time of Reading:					
DEPTH DEPTH (feet) (feet)	MATERIAL D Cobbles and Boulders with Silty Gr moist, ~70% cobbles and boulders.	ESCRIPTIO ravel, loose,	N dark olive brown,		SAMPLE	PEN. (tsf)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
	Granitic Rock, light yellow brown, weathered, soft to moderately soft,	decomposed dry.	to intensely						
	Essential excavation refusal at 5 fee No free groundwater encountered. Backfilled with native cuttings on 1	et. 10/16/2009.							
	LOG C	DF TEST	PIT TP2						
Date Excavated:	10/16/09 Logge	ed by:	RCP	Depth	to W	ater	(ft): _	N/	/A
Equipment:	CASE 580C Surface	ce Elevation((ft): <u>~6373</u>	Time of	of Re	adin	g:		
DEPTH (feet) GRAPHIC LOG	MATERIAL D	ESCRIPTIO	N		SAMPLE	PEN. (tsf)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
	Silty Sand, SM, loose, dark brown, Cobbles and Boulders with Silty Gr brown, moist, ~60% cobbles and bo rock.	moist, with o ravel, mediui oulders, deco	organics. n dense, yellow mposed granitic						PA
	Granitic Rock, light yellow brown to intensely weathered, moderately so	to light gray, ft to moderat	decomposed to ely hard, dry.						
14008-0640 BLACKBK	Essential excavation refusal at 5 fee No free groundwater encountered. Backfilled with native cuttings on 1	et. 10/16/2009.							
1152 Aubu Phon E-Ma	11521 Blocker Drive, Suite 110 Auburn, CA 95603 Phone: (530) 887-1494 Fax: (530) 887-1495 E-Mail: bcistaff@blackburnconsulting.comDonner Summit PUD Reservoir Nevada County, CA								

	LOG OF TEST PIT TP3								
Date Excavated:	10/16/09 Logged by: _	RCP	Depth	to V	Water	(ft): _	N	Ά	
Equipment:	CASE 580C Surface Eleve	ation(ft): ~6382	Time of Reading:						
DEPTH (feet) GRAPHIC LOG	MATERIAL DESCRI	PTION		SAMPLE	HAND PEN. (tsf)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS	
	Cobbles and Boulders with Silty Gravel, m brown, moist, ~60% cobbles and boulders, rock. Granitic Rock, light gray, moderately to sli moderately hard to hard, dry. Essential excavation refusal at 2.5 feet. No free groundwater encountered. Backfilled with native cuttings on 10/16/20	edium dense, yellow decomposed granitic ghtly weathered,							
	LOG OF TH	CST PIT TP4					N	(A	
Date Excavated:	10/16/09 Logged by: _	RCP	Depth	to V	Water	(ft): _	N/	A	
Equipment:	CASE 580C Surface Eleve	ation(ft): <u>~6401</u>	Time	of R	leadin	g:			
DEPTH (feet) GRAPHIC LOG	MATERIAL DESCRI	PTION		SAMPLE	HAND PEN. (tsf)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS	
886_1LOGS.GPJ BLACKBRN.GDT 12/17/09	Silty Sand, SM, loose, dark brown, moist, Cobbles and Boulders with Silty Gravel, m brown, moist, ~50% cobbles and boulders, Granitic Rock, light gray, moderately to sli moderately soft to moderately hard, moist. Essential excavation refusal at 2.5 feet. No free groundwater encountered. Backfilled with native cuttings on 10/16/20	with organics. ledium dense, yellow decomposed granitic ghtly weathered,						СР	
1152 Aubu Phone E-Ma	1 Blocker Drive, Suite 110 urn, CA 95603 e: (530) 887-1494 Fax: (530) 887-1495 uil: bcistaff@blackburnconsulting.com	11521 Blocker Drive, Suite 110 Auburn, CA 95603 Phone: (530) 887-1494 Fax: (530) 887-1495 E-Mail: bcistaff@blackburnconsulting.comDonner Summit PUD Reservoir Nevada County, CA							

	LOG OF TH	EST PIT TP5						
Date Excavated:	10/16/09 Logged by: _	RCP	Depth	to	Water	(ft): _	N/	/A
Equipment:	CASE 580C Surface Elev	ation(ft): <u>~6455</u>	Time of Reading:					
DEPTH (feet) GRAPHIC LOG	MATERIAL DESCRI	PTION		SAMPLE	HAND PEN. (tsf)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
	Cobbles and Boulders with Silty Gravel, m brown to brown, moist, ~50% cobbles and	boulders.						
	Granific Rock, light gray, decomposed to r moderately soft to moderately hard, moist.	noderately weathered,						
- 5 -	Essential excavation refusal at 4.5 feet. No free groundwater encountered. Backfilled with native cuttings on 10/16/20	009.						
	LOG OF TH	EST PIT TP6						
Date Excavated:	10/16/09 Logged by: _	RCP	Depth	to	Water	(ft): _	N	/A
Equipment:	CASE 580C Surface Elev	ation(ft): <u>~6368</u>	Time	of I	Readin	g:		
DEPTH (feet) GRAPHIC LOG	MATERIAL DESCRI	PTION		SAMPLE	HAND PEN. (tsf)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
	Silty Sand with Gravel, SM, loose, yellow organics (tree roots), decomposed granitic	brown, moist, with rock.						PA
	Granitic Rock, yellow brown to light gray, weathered, moderately soft to moderately l Essential excavation refusal at 6 feet. No free groundwater encountered. Backfilled with native cuttings on 10/16/20	decomposed to intense hard, moist.	ely					
Aubu Aubu En E-M	21 Blocker Drive, Suite 110 urn, CA 95603 ne: (530) 887-1494 Fax: (530) 887-1495 ail: bcistaff@blackburnconsulting.com	Donner S Ne	Summi vada C	it F Cot	PUD I unty, (Reser CA	voir	









Test Pit Photos

Site Photos



Site 3 Test Pits





TP1

TP1



TP2

TP2



TP3



Photos taken on 10/1/02009 and 10/16/2009


TP4











TP6

TP4

Photos taken on 10/1/2009

Site 3 Photos



Conceptual Designs

Cost Estimates



Damier Schuldt Public Unfilte Beefrict Fessibilite Schuly Donner Sommit Beservoir - Site 2 Englisher's Estimate of Protociste Cost + Millant Colloci Reservoir

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6 Dive used (1200) 1000 Cu, Yet, S10 S10 Got Channel Direct Constructions 1000 Cu, Yet, S2 SN000 Subitital Direct Constructions \$11000 Cu, Yet, S2 \$126,400 Contaggingy or 2004 \$145,202 \$126,400 \$1145,202 Subitital Direct Constructions \$1145,202 \$176,400 \$1145,202 Contaggingy or 2004 \$1145,202 \$17,600 \$1145,202 Finglateering and Administration Custs \$17,600 \$17,600 \$17,600 Owner Administic testion 200 \$17,600 \$17,600 \$17,600 Owner Administic testion 200 \$17,600 \$17,600 \$17,600 Owner Ageneristic 500 \$17,600 \$17,600 \$17,600 Owner Ageneristic 500 \$17,600 \$17,600 \$17,600 Darg envices 500 \$12,600 \$14,6000 \$17,500 Large envices 700 \$12,600 \$14,600 \$14,600 Darg envices 700 \$12,600 \$14,600 \$15,500 Darg envices 700 \$12,600 \$14,600 \$14,400,600 Coold ageneric 3000 \$14,400,600 \$1,400,600 <td< td=""><td>have the black of the price</td><td>1,840</td><td>Cu. Yes</td><td>\$0</td><td>816,560</td></td<>	have the black of the price	1,840	Cu. Yes	\$0	816,560
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Subtotal Direct Construction§926,400Costanguegy (n. 2004)\$145,202Total Coast contrant\$872,782Engineering and Administration Costs\$17,000Owner Administration et 2%\$17,000Owner Legal or 15%\$17,000Owner Legal or 15%\$17,000Data concrete\$14,000Data concrete\$25,000 acreData concrete\$24,000Data concrete\$24,000Data concrete\$25,000 acreData concrete\$24,000Data concrete\$25,000 acreData concrete\$25,000 acreData concrete\$25,000 acreData concrete\$25,000 acreData concrete\$25,000 acreData concrete\$25,000 acreData concrete\$1,410,000Data formated Cost\$1,410,000	Cleaner, Access (Moniterance Read	L LIVILL	Cul mes	85	şsjalar
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Figikeering, and Administration Closes \$17,000 Ownell Administration et 2% \$17,000 Ownell Egities = 5% \$13,000 Final concrete 5% \$14,000 Final Formated Cost \$1,400,000 Final Formated Cost \$1,400,000	Tatel Coestman				\$871,742
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Owner Legal of 1.50 \$13,000 Initial conclust 5% \$33,000 Luxe, Action school (#\$25,000 action \$240,000 Initial conclust 5% \$240,000 Initial fractional const \$240,000 Initial fractional const \$1,400,000 Initial fractional const \$1,400,000	Owner Administration 2%				\$17,600
Interference of 5% \$44,000 Lores Action school (# \$25,000 action \$240,000 Inguineering Construction Inspectrum and Coast act School (# 15%) \$15,000 Total Englineering and Automistication \$445,000 Cools agent Coast act School (# 20%) \$89,000 Total Englineering and Automistication \$55,000 Total Englineering and Automistication \$1,400,000	Owner Legislavi - 5 th				\$13,000
Lors: Action station (#1\$25,000 action \$240,000 Insymmetring Action Inspectrum and Construct Advances (15%) \$1.5,000 Total: Englineating and Advances (action \$445 and Cools agent Cat 20.26 \$\$89,000 Total: Englineating and Advances (action \$\$2.405,752 Lotal: Extended Cast \$\$1.400,000	hierand to be over \$150				\$44,000
Inguistry og Konstont og Inspectom und Courtor (15%) \$13,300 Total: Englineeting und colombist atton \$445.000 Coult og en CV (d. 20%) \$495.000 Total: Engline ting and colombist atton \$445.000 Total: Engline ting and colombist atton \$445.000 Total: Engline ting and colombist atton \$445.000 Total: Engline ting and colombist atton \$534,000 Total: Engline ting and colombist atton \$534,000 Total: Extinated Cost \$1,400,000 Total: Estimated Cost \$1,400,000	Luiss Action school (# \$25,0006 action				\$240,000
Total Englineating and Automotion action\$445.000Coole science (a. 20.2a)\$\$9,000Toral Englished by and Automotorization\$\$9,000Toral Englished Cost\$\$1,405,752Lond Entrated Cost\$1,400,060	loganceing for story or hisperior and	Contact Admin	95 1 5 5		4. 6 2000
Coole spence (a. 20%) \$\$\$9,000 Tors? Engloce log and Admonistration \$\$\$1,000 Fotal Estimated Cost \$1,400,000 Fotal Estimated Cost \$1,400,000	Form: Englineering and commission				5445 400
Toral Englished Systems System	Cook spence of 20%				282,000
Fortal Estimated Cost Fortal Estimated Cost Scienced Sciences Sciences Sciences Sciences Sciences Sciences Sciences Sciences Sciences	Toral Engloycolog and Adomistration				5534,000
Land Patimater's asta Reported 51.400.000	Fortal Estimated Cost				51,405,752
	Lond Pathenter Cost's Recorded				51,400,000

Honnier Sammit Public Office District Frashility Study Donner Summit Reservate - She 2 Finginoer's Yelfmare of Productie Cost 12 Million Galline Reservati

Description	Quantity	l mit	Lint Cast	Dola' Visst
Direct Construction Costs				
. Mab jization	1	la ga	jungi Syum	Sugerse
2 Forba dogen.				
Clear gas Counts	5.11	Acres	\$20,000	\$170, X•0
S top2atg	5,0191	Cic Mas	N4	\$15560
Fore watern & Key any Tax reasons	7,800	Co. Yas	No	\$3X-001
Constructed Theological and	23,750	Cal Mds	55	5116-001
Dodie seeding & Record Chatrol	1	Joh	Consep Storn	\$10,000
Arguen de Hood	7.50	Le is	\$35	\$25,850
CS, fillion by				
lessava, or and Bacadil	1.30	the Yels	555	કર,બહા
(4) is participant a country of the	150	Lus Id	\$246	\$16,0460
legistion of this retricted in	30	Co. Yds	\$200	26.0989
Fashipy Dissepation: Dec. e	1	165	5,50,01.0	\$20,000
Rollip	2.30	LO IN	860	\$1);:080
4 (3a(b))				
187 Day Using Transportation	7.10	ton 19	\$150	\$70,000
Gare, Congrets and Constein	I	100	Lugg Saug	\$50,000
Kin Kin	1.60	Luns -	\$60 P	\$5,000
5 Beleison Linx				
III (PL 8) and Large	184,000	Sal Fr	51	\$185,000
Lanci Mademar, M. Durita	2,240	Ca Mds	810	\$22 000
S Decrement (her us I				
Chemin et Lissian attaon	1.0604	Cir. Vd.	\$10	Charge 1
Chapter Access Manderance Road	1,080,8	Cu l'ds	\$5	\$5,000
Suddonak Miros (Transmission)				\$855.650
Continuence in 20%				\$171,139
Total Construction				11.026.700
Englanceing and Administration Units				
Owner Astronomication of 215				\$21,000°
Owner, available No.				\$15,000
f man f is at N a				\$51,000
Land Accessive on cal \$25,980 Autor				\$290.000
Ung next mp. Construction, respectively, and C	Contrast Adminis	tin 1959		21245-00
Fotal Regence trag and Admitter strations				4481.000
Compared of all 20%				\$16,290
Patel Englishering and Adordetstration				\$577,200
Lota) Colonalist Cost				\$1,643,980
Total Extinuing Cost - Recorded				51.693.090

Danion Surondi Public Luthy District Fraslodity Study Octaver Surantit Reservour - Site 3 Engineer's Oxforate of Probable Cost 4 Million Gallon Reserver

Description	Quantity	Fult	Lant Cost	Total Cost
Divert Curstmatter Custs				
E Nadalization	I	երե	ing the second	\$,00,090
Z. Bandsa phoneen				
Clean and Girl b	2.6	Acres	\$20,0006	N50-0600
Shipporg	2,639	Co. Yes.	54	S2 (500
Foundation & Keyway, Excavoluto	4,000	Co. Yos.	N6	3271601
Compared Eabard acts	12,000	Co. Ys8.	55	\$45100
Hydrosecting & Freenic Control	1	J ob	Camp Stan	\$15,000
Approache Universit	610	Len.	\$15	₽1,60
Spil way				
Encourses and Rectified	p (xe	Cyc Vils	<*<	\$5,953
100 Konforded Coreferent Pipe	[50	Lie D	\$1.20	\$18,0%0
Rentforced Concrete Cradic	16	Car Silk.	\$240	47,220
Large biospacios bevale	1	Jub	\$20,0693	5,742,08.78
Kir Rap	200	il ni	560	\$\$7,00.0
18" One Cone Inscissional	27.80	1.00.12	3150	\$54.000
Cone, Controls and Conduct	I	2015	Emerge Stere	\$10.2.0
Rue Rap	(00)	1,000	\$60	V5(1040
S Reserved Legel				
IDDEC 8P and Long	67, 18 M I	Sacts.	51	\$92,300
Liner Redshine (# 1000b)	1=0	Ca Yab	510	\$1, \$00
to Discossion Chaonel				
Channel I are as it mu	K 10	Call Yole	510	\$6,000
Channel Access Manue cross Road	K00	1.1.3 de	\$5	83,000
Statistical Different Control (continued and				\$611.650
Contraction in 75%				1155 314
Ender, Constituted kan				1777.063
Engineering and Astrobelstration Costs				
there and material and the				<u>դ</u> են հման
Charge Legend for 5.5%-				\$12100
Lenne dece de Sta				5-9,1808
Lord Action Statistics STA 1801 Statistics				5290,000
Laplacing, Construction inspection and	Foreflowt Adron	61 51 a		2112,000
the st knows are the straight straight				SREUDO
Frankinghee ing inter contained and				\$96.000
Tute: Roghesering and Schululymation				5480,000
Lotal Extinues d Cost				\$1,7\$7.0G3
Total Estimated Cost - Revealed				51,260,000

Domene Summit Palalie Fifting District Crasifolity Study Domen Stretmit Reservoir – Site X Engineer's Exfinate at Probable Cost R MFILan Cython Reservoir

Description	Quantity	1 juli	Carl Cast	Foral Cost
Dans Construction Costs				
(N'nite)ata(an)	1	Jaco	f jatap Suta	44:0,060
J. albarik alead				
Clear and Grub	1.0	Actes	\$2.0000	3503020
SUIPPOP	3.200	Cr. Ydy	<.	\$12,800
from at on & Keyway, hoc way on	5,500	CoNW	86	A C 301
Congresses I obserkman	1.0 8001	C. Yos	\$8	\$158,400
Hydrosecomy & Pressourt Control	I.	las	in ap Norm	\$10,000
Aggregate Dasc	461643	Lons	315	517,759
(Spiloway				
French and and Darkfill	100	Cr. Yas	555	\$5.900
24 Readorized Concrete Pipe	150	Line Et	\$240	\$16-X+0
Reinforced Concerte Unolle	1 m	COME.	52(8)	\$4,000
Livenite Driving on Device	l	lean-	570,000	520,000
Kin Kan	7060	Units	\$-6.0	512, 800
4 (A. A.				
187 file it one line are used.	200	to b:	8.00Q	\$ 70, 800
Cate, Concerts and Conduct	1	Jach	Jointon Notion	Ş4n Ket
ttig ft mei	(A)	Loos	\$60	10 46
5 Reserved Line				
EUTPT String Lange	Linyara	South	51	\$100,000
Liner Redation of Teach	1 IN TH	to Yok	\$10	516 MrJ
6 Discourse Channel				
t Despired Lances (China	4700	Co., Yds	5.11	46.088
(Theory I Age esso Maniferration Read	1600	Co. Yds	85	\$3,000
Subtrad Direct Construction				\$779,050
Figuring courses we 25%				5154,913
Para Construction				\$974,563
Engineering and Admentifulfon Costs				
Charase Ashersefelsurations 203				\$16,000
Owner Legal as 1 Ma				\$13,0802
Fatareng at Sa				\$15,0302
Land Alepasonon by \$25,0000 Keep				\$266,000
Engotzening, Constitution Inspection and	Connact Admin	con 1 255		2046/000
Total Engineering and Administration				\$429,000
Copelogency or \$5%				\$107,250
Field Fughers ag and Administration				\$5.46.250
Total Killmides Cod				51,511,813
Total Telenoles Cools Remaind				31,510,000

Dummer Stommer Public Criffity Disreter Feasibility Standy Donner Standatt Reservoir - Sile J Englister's Estimate of Probable Cost 12 Million Callop Reservoir

Desceration	Quantity	Մոն	Cost Cast	Fullik Cust
Daraut Constances and Costs				
Stoholi zanovi	I	j eb	a ng Nau	\$ her one
Loby alcogets				
Chyan and Circle	6.0	Acres	k20,300	N130-060
Shingtong	1,6030	156 856	5.4	\$15,600
Secondarion U.Keyiyay, Paratahasi	5,800	The Yes	\$6	5.54 XOD
Conceptation III Conductations in a	25,000	Co. Yels	\$8	\$216,000
Avd exceding & Elevicer Fernald	I	J. dy	Comp Sam	\$10.000
Approximation from	1/10(1	Land	5.15	8.84 8100
Copy Iway				
excession and back 0	1001	 Col Vile 	556	\$5,500
24 Combred Coreserviture	150	Lin II	\$240	\$ \a 0150
Teinforced Concorre Challe	50	the Male	\$704	\$6-000
sexpy Dissign and Device	1	Job	\$20,300	5.30,0140
dip dap	200	Detts	599	512 000
al the class				
187 Dia Usia, Decasoroni	200	tiu 📭	53.50	\$70,000
Couples - Construct - State I - Constate pr	1	Joh	1 DY 5 70	<u> Տ</u> եր մես (
R to Ran	ואין	Lens	5:00	Secure.
A Reversion Lance				
HERE SECOND and	162,906	Sould	×.	\$152,900
Luon Heybling, -U. Amili	2.015	5 m 15 m	4141	\$20, 50
6 Discussion Connect				_
Changed I wavatered	6.000	Co. Mis-	\$16	\$5,000
Chinese) Access-Marricisance Road	6.00	CurAde	55	\$7,000
salatoral delivert. Construction				\$118,450
Combingency for 25%				\$224,613
Trajat d'reaste profisio				\$1,148,053
Engineering and Aslamistration Custs				
Construction of the second states of the				$\{2, 0, 0\}$
Control I agit of C. 572				\$17,040
interence of State				\$27,040
2 2 Across dama to \$25 DOMANT				\$200,040
upped on got or structure hisportion and	Contract Advice	er 1876		\$122,090
tessi Fuginendus and Administration				5469,030
Condugates a 25%.				\$117,250
Loted Englanceing and Administration				\$556,250
Fright is structured. Const				\$1,714,313
Total Estimated Custa Roomded				\$1,730,000













Appendix E Environmental Database Search Results

Natural Diversity Database

CNDDB Wide Tabular Report - DSPUD Wastewater Treatment and Disposal Facilities Plan

9 Quad Search included the following USGS Quads: Soda Springs, English Mtn., Webber Peak, Independence Lake, Cisco Grove, Norden, Duncan Peak, Royal Gorge, and Granite Chief

[Population Status Presence											
		I	1		Elemen	Element Occ Ranks					Historic	Recent	Pres.	Poss.	
Name (Scientific/Common)	CNDDB Panks	Other Lists	Listing Status	Total				_ n		U	>20 yr	<=20 yr	Extant	Extirp.	Extirp.
Name (Scientific/Common)	Raiks			EUSI	A	Б	C	U	^				I		1
Accipiter cooperii	G5	CDFG:	Fed: None	99	0	0	0	0	0	1	1	0	1	0	0
Cooper's hawk	S3		CalNone	S:1											
Accipiter gentilis	G5	CDFG: SC	Fed: None	427	0	5	0	0	0	3	3	5	8	0	0
northern goshawk	S3		CalNone	S:8	-	-	-			-		-			-
			Fade Maria	10	0	4	0		0	4	F	0		0	0
Apiodontia rura californica Sierra Nevada mountain beaver	651314	CDFG: SC	Callione	10	0	1	0	0	0	4	Э	0	5	0	0
	5255		Canone	3.5											
Botrychium Iunaria	G5	CNPS: 2.3	Fed: None	8	0	0	0	0	0	1	1	0	1	0	0
common moonwort	S2?		CalNone	S:1											
Bruchia bolanderi	G3	CNPS: 2.2	Fed: None	18	0	0	0	0	0	1	1	0	1	0	0
Bolander's bruchia	S2.2		CalNone	S:1											
Carey constanceana	G1		Fed: Nono	1	0	0	0	0	0	1	0	1	1	0	0
Constance's sedge	S1 1	CINF 3. ID.I		1	0	0	0	0	0	'	0	1	· ·	0	U
Carex limosa	G5	CNPS: 2.2	Fed: None	34	0	0	0	0	0	2	2	0	2	0	0
mud sedge	S3?		CalNone	S:2											
Claytonia megarhiza	G4G5	CNPS: 2.3	Fed: None	11	0	0	0	0	0	1	1	0	1	0	0
fell-fields claytonia	S2S3		CalNone	S:1											
Cryptochia excella	G1G2	CDEG.	Fed: None	2	0	0	0	0	0	1	1	0	1	0	0
Kings Canyon cryptochian caddisfly	S1S2		CalNone	S:1	Ū	Ū	Ū	Ū	•			•		0	°,
										1					
Cypseloides niger	G4	CDFG: SC	Fed: None	46	0	0	0	0	0	1	I	0		0	0
	52		CalNone	5:1											
Dendroica petechia brewsteri	G5T3?	CDFG: SC	Fed: None	48	0	0	0	0	0	1	1	0	1	0	0
yellow warbler	S2		CalNone	S:1											
Desmona bethula	G2G3	CDFG:	Fed: None	4	0	0	0	0	0	1	1	0	1	0	0
amphibious caddisfly	S2S3		CalNone	S:1											
Drosora anglica	C5		Fed: Nono	16	0	0	0	0	0	2	2	0	2	0	0
English sundew	G5 5253	CNP5: 2.3		01 9-2	0	0	0	0	0	2	2	0	2	0	0
	0200		Cantone	0.2											
Empidonax traillii	G5	CDFG:	Fed: None	87	4	2	1	0	1	2	2	8	9	1	0
willow flycatcher	S1S2		CalEndangered	S:10											
Epilobium howellii	G4	CNPS: 1B.3	Fed: None	99	3	1	0	0	0	0	0	4	4	0	0
subalpine fireweed	S4		CalNone	S:4											
			ļ												

Natural Diversity Database

CNDDB Wide Tabular Report - DSPUD Wastewater Treatment and Disposal Facilities Plan

9 Quad Search included the following USGS Quads: Soda Springs, English Mtn., Webber Peak, Independence Lake, Cisco Grove, Norden, Duncan Peak, Royal Gorge, and Granite Chief

				1							_r Populatio	n Status-	-Presen	ce ——	
		1	I		Eleme	Element Occ Ranks					Historic	Recent	Pres.	Poss.	
Nome (Deientifie/Oemmen)	CNDDB	OthersLiete	Listing Otatus	Total		-	•	_	v	U	>20 yr	<=20 yr	Extant	Extirp.	Extirp.
Name (Scientific/Common)	Ranks	Other Lists	Listing Status	EUS		Б	C	U			I		1		I
Erigeron miser	G2	CNPS: 1B.3	Fed: None	16	4	5	0	0	0	6	6	9	15	0	0
starved daisy	S2.3		CalNone	S:15											
	0570		Ende Maria	01			-		1	10		10	1/	1	0
Eriogonum umbellatum var. torreyanum	G512	CNPS: 1B.2	Fed: None	21	0	2	1	0	I	13	4	13	16	I	0
Donner Pass buckwheat	52.2		CalNone	5:17											
Great Basin Cutthroat Trout/Paiute Sculpin	G?		Fed: None	2	0	1	1	0	0	0	2	0	2	0	0
Stream	SNR		CalNone												
Grus canadensis tabida	G5T4	CDEG	Fed: None	603	0	0	0	0	0	1	0	1	1	0	0
greater sandhill crane	S2		CaThreatened	S·1		Ū	Ū	U	Ū	•	Ĵ	·		Ū	
g	02			0.1											
Gulo gulo	G4	CDFG:	Fed: None	157	0	0	0	0	0	6	5	1	6	0	0
California wolverine	S2		CaThreatened	S:6											
Haliaeetus leucocephalus	G5	CDFG:	Fed: Delisted	241	0	1	0	0	0	2	0	3	3	0	0
bald eagle	S2		CalEndangered	S:3			•								
Histrionicus histrionicus	G4	CDFG: SC	Fed: None	1	1	0	0	0	0	0	0	I	1	0	0
hariequin duck	S2		CalNone												
Ivesia sericoleuca	G2G3	CNPS: 1B.2	Fed: None	66	0	0	0	0	0	1	1	0	1	0	0
Plumas ivesia	S2S3		CalNone	S:1											
lvesia webberi	G2	CNPS: 1B1	Fed: Candidate	10	0	0	0	0	0	1	1	0	1	0	0
Webber's ivesia	S2 1		CalNone	S·1		Ũ	Ũ	-	-	-		-		-	-
	02.1			0.1											
Juncus luciensis	G3	CNPS: 1B.2	Fed: None	26	0	0	0	0	0	1	0	1	1	0	0
Santa Lucia dwarf rush	S3		CalNone	S:1											
Lepidostoma ermanae	G1G2	CDFG:	Fed: None	1	0	0	0	0	0	1	1	0	1	0	0
Cold Spring caddisfly	S1S2		CalNone												
	0572740		Fed: Nono	11	0	0	0	0	0	2	2	0	2	0	0
Sierra Nevada spowshoe bare	6313140	CDFG. SC		6.2		0	0	0	0	2	2	0	2	0	0
	52?		Californe	5.2											
Lewisia longipetala	G2	CNPS: 1B.3	Fed: None	14	0	2	0	0	0	3	1	4	5	0	0
long-petaled lewisia	S2.2		CalNone	S:5											
Lewisia serrata	G2	CNPS: 1B.1	Fed: None	9	0	0	0	0	0	1	1	0	1	0	0
saw-toothed lewisia	S2.2		CalNone	S:1		Ŭ	č	-	-	÷		-		-	-

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											-Populatio	n Status	Presen	ce ——	
		1	1	Takal	Element Occ Ranks					Historic	Recent	Pres.	Poss.	Fasting	
Nome (Scientific/Common)	CNDDB	Other Liste	Listing Status						v	U	>20 yr	<=20 yr	Extant	Extirp.	Extirp.
Name (Scientific/Common)	Railks	Other Lists		EUS	A	D	C	U	^	I					1
Martes americana sierrae	G5T3T4	CDFG:	Fed: None	110	0	0	0	0	0	22	18	4	22	0	0
Sierra marten	S3S4		CalNone	S:22											
	05		Fod: Condidate	500	0			0		0	7	1	0		0
Martes pennanti (pacifica) DPS	Go	CDFG: SC	Ped. Candidate	539	0	0	0	0	0	ð	/	1	8	0	0
	5253		Calunknown	5:8											
Meesia uliginosa	G4	CNPS: 2.2	Fed: None	31	0	0	0	0	0	4	0	4	4	0	0
broad-nerved hump moss	S2.2		CalNone	S:4											
Ochotona princens schisticens	G5T2T4	CDEG	Fed: None	20	0	0	0	0	0	3	3	0	3	0	0
drav-beaded nika	S2S4		CalNone	<u> </u>	0	0	0	0	0	5	5	0	5	0	Ŭ
	0204		Carvone	0.0											
Oncorhynchus clarkii henshawi	G4T3	CDFG:	Fed: Threatened	27	1	0	1	0	0	1	0	3	3	0	0
Lahontan cutthroat trout	S2		CalNone	S:3											
Pandion haliaetus	G5	CDFG:	Fed: None	433	0	1	0	0	0	0	0	1	1	0	0
osprey	S3		CalNone	S:1											
										-					
Phacelia stebbinsii	G3	CNPS: 1B.2	Fed: None	45	2	4	0	0	0	T	2	5	/	0	0
Steppins' phacella	\$3.2		CalNone	S:7											
Potamogeton praelongus	G5	CNPS: 2.3	Fed: None	4	0	1	0	0	0	1	1	1	2	0	0
white-stemmed pondweed	S1S2		CalNone	S:2											
Rana boylii	63	CDEG SC	Fed: None	773	1	0	0	0	0	0	0	1	1	0	0
foothill vellow-leaged frog	S2S3		CalNone	S·1	•	U	Ū	Ū	Ũ	Ū	U U		•	0	Ĵ.
	0200			0.1											
Rana sierrae	G1	CDFG: SC	Fed: Candidate	513	1	3	0	0	0	16	6	14	20	0	0
Sierra Nevada yellow-legged frog	S1		CalNone	S:20											
Rhamnus alnifolia	G5	CNPS: 2.2	Fed: None	16	0	0	0	0	0	2	1	1	2	0	0
alder buckthorn	S2.2		CalNone	S:2											
Rhypchospora alba	G5	CNPS: 2.2	Fed: None	11	0	0	0	0	0	1	1	0	1	0	0
white beaked-rush	53.2	01110. 2.2	CalNone	S1	U	0	U	0	Ũ			Ũ	•	0	Ű
	00.2			0.1											
Schoenoplectus subterminalis	G4G5	CNPS: 2.3	Fed: None	19	0	0	0	0	0	1	0	1	1	0	0
water bulrush	S2S3		CalNone	S:1											
Taxidea taxus	G5	CDFG: SC	Fed: None	441	0	0	0	0	0	1	1	0	1	0	0
American badger	S4		CalNone	S:1											
Viele tomontosa			Fed: None	E A	4	4	0	0	0	2	1	2	A	0	
	63	UNFO. 4.2		54 C·4	I	I	U	U	0	2		З	4	0	U
	00.2			3.4											

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	CNDDB	OthersListe	Listing Ctatus	Total	Elemen	t Occ F	Ranks		v	U	Historic >20 yr	Recent <=20 yr	Presen Pres. Extant	Poss. Extirp.	Extirp.
Vulpes vulpes necator Sierra Nevada red fox	G5T3 S1	CDFG:	Fed: None CalThreatened	111 S:2	0	0	0	0	0	2	2	0	2	0	0

United States Department of the Interior

FISH AND WILDLIFE SERVICE



Sacramente Fish and Wildlife Office 2800 Cottage Way, Room W-2605 Sacramento, California 95825

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Neptember 9, 2009

Desument Number: 090909123632

Greg Netuzak 500 LOGIC Engineering 101 Providence Mine Rood, Nuite 202 Netwola City, CA 95959

5 (b)69. Species list for OSPUD Wastewater Treatment and bispesal rapidies Plan

Icea - Interested party.

We are sending this offic all species list in response to your September 9, 2009 request for information about endangered and threatened species. The list covers the California ununties and/or U.S. Geblegical Silmley 2% minute quadies quads you requested.

Our database was developed primarily to assist. And all agenties that stellonsulting with us. Therefere, our lists include all of the versitive species that have been found in a certain area and also ones that may be affected by projects in the area. For example, a fish may be all the list for a good of it lives sumewhere downstream from that quast Birds are includen even of they only incrute through some all of other works, we include all of the species we even the people to cension when they do komenting that affects the environment.

Please mad important information About Your Species List (be do). If explains now we many the list and describes your responsibilities under the Engengered Species Act.

Our database is constantly updated as species are proposed, lister and relisted. If yet address proposed and candidate species in your planning, this should not be a prepiem. However, we recommend that you dot we updated list every 90 days. Frat well a be became 05, 2009

Please contact us if your project may affect endangered on threatened species or if you have any questions about the attached list of your responsibilities under the Endangered Species Act. A list of horeneeren Species Program contacts can be found of the Visional or the transmission of the contact.

Endangered Species Division

TAMERICA

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 090909123632 Database Last Updated: January 29, 2009

Quad Lists

Listed Species

Fish

Hypomesus transparificus colta smelt (T)

Oncorhynchus (- Saime) clark, nonkha... Lanontan cuttorean trout (7)

Oncorhypenus mykissi

Contral Valley steelhead (T) (NHFS)

Candidate Species

Amphio ans

Rana mascesa

mountain yel co-legged (rog (f))

Mammals

Marries pennantifisher 123

Plants

Iversia webbeen

Webber 5 (vesial 10)

Quads Containing Listed, Proposed oil Candidate Species:

NIDEPENDENCE CAKE (555A) WEBBER PEAK (555B) SCDA SPRINGS (175C) NORDE 1775(0) FROM SPRING (175CA)

County Lists

Nevada County Listed Species Inverteorates

besingeous conformers dimerchus volley elderber v ferghum beade (T)

Fish

Depertynchus / = Salmer, Hark) nankhawi Lahontzin euterkont trout (T)

Disashynchus mykissi

Central Valley stealnes4 (Tr (NMFS) Catoral Nations, Central Valley streethead (X1 (NMFS)

Amphibians

Rana aunora drayroni. California red-legged (rug (T) Critical Fabrar, California sed legged frog (X)

Plants

Earvaragia stenninski Stebbins's moroing-glory (6)

Proposed Species

Amphibiank

Rona werdra orayiany Critical habitat, California red-legged from (PX)

Candidate Species

Amphibians

Rana muscosa impuntain ye law legged trag (C)

Mammals

Marter pennang 1 kner IC;

Placer County

Listed Species

Invertebrates

Branchine (1) Conservation Conservation for y set that (5)

Wanchineesa lynchi

 Cotical Labitat, versal poor fory shring (0) versal pool faily shring (7)

Desencence californicus autorphius valies elderheitry tengheim bestle (T)

серісклов раснальк

http://www.fws.pov/siteramenia/es/spp/lasts/inite/fist/efn/

vernal pool tadpole shrinip (E).

Fish

Cocorhynchus (...Soime) clarki sensnawi ... Labortan cutthresi train (T)

Oncomynenus mykika Central Valley steelnead (Y) (NMES) Critical habitat, Central Valley steelhear 18) (NMES)

Officitly/schools/havescha CA-Ita-Valley spiniatrum of neek salmon (T) (NMFS) white trun chinock salmon, Sacramento River (E) IAMPS).

Amp≃ibians

Ambystema culifermense Califerniait ger salamander, central population (T)

Rana aurara diaviani California real egged frog (T)

Repules

i hamnopnis gigak o antigatter shake (T)

Proposed Species

Amphibians.

Pana aurora orayianii Crisical habbar, California red legoea frog (PX)

Candidate Species

Amphibians

Hund intestication vellows equivalent (C).

Mamma s

Morres perinàne les let (C)

Plants

Rangga Sabambellata Tahoo yekser crass (C)

Key:

D) in viewees the lotter is through the larger set of bone

To The Orient of Steeles on Will have only independently the Grouperbill (after

(Free Lawer). Other any in the net of the Free wall Registry the time of the term of the second of

• Profiling Agents and the frame and the first of the second state of the second st

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ProBland the rest 1900-00 the species of other sister. Debra that takes by grows with pro-

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Mode step your cost once will be early a refull fact, the events for the period

all of the Acted Midning Steel (or this are in-

Important Information About Your Species List

How We Make Species Lists

We store information about enclangered and threatened species lists by U.S. Genlogical Survey 7% minute guads. The United States is divided into these guads, which are about the size of San Francisco.

The similaries on your species list are ones that occur within, **or may be affected by** prejects, within, the guads covered by the list.

- Fish and other aquible species uppear on your list if they are in the same watershep as your quad out water use in your goad might effect them.
- Antulits was will be on the bat for 2 guzd or county if post cides upplied in that area in ay bat carries to their reportably all currents.
- Birds are shown regardless of whether they are resident of initiationy. Relevant birds on the county list should be considered reparatess of whether they appear on a guar list.

Plants.

Any plants on your list are ones that have actually heen observed in the area covered by the list. Plants may exist in an area without over traving deen detected there. You can find out what's in the surrounding guads through the California Native Plant Society's online investory of Plane and Fild regions. Plant 1.

Surveying.

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any projected and candidate species on your list. See our should be used and by for the cages.

For plant surveys, we recommend using the Gill is in Story Clindu Ling and Paris Log Sections's Inventories. The results of your surreys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act.

All animals identified as listed above are fully protected under the Elidangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations such bit the take of 2 federally listed wildlife Species. Take is defined by the Act as ito balass, harm, pursue, nunt, shoet, wound, kill, trap, capture, or collect" any such animal

Take may include significant liabitatin polification of degradation where in actually kills or injures with felloy significantly impairing essential behavioral patterns, including breading, (coding, or sillater (GC CFR §37-3)

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

If a Federal agency is involved is that is polling, funding, or carrying out of a project that may
result in take, then that agency blust engage in a for two clust 't true with the Service.

Dering form all consultation, the federal agency, the applicant and the Service work together to aveid or minimize the impaction bated species and their balitat. Such consultation would result in a piclogical i pin on by the Service addression the entropated effect of the project on listen and proposed species. The opin on may authorize a limited level of infidential take.

 If no Federal agency is involved with the project, and federally listed species may be taken as pall of the plotest, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit of you solid it a satisfactory conservation plan for the species that you'd be affected by your project.

Should you survey determine that lederally isted or proposed species ection in the area and are usely to be affected by the project, we recently end that you work with this office and the California Department of fish and Game to Jevelopie plan that intrimizes the project's cirest and indirect impacts to listed spaces and can pensates for project-related loss of Fabriat. You should include the plan in any environmental Jecuments you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior, food, water, air, right, other nutritional or physiological requirements, cover or shelter, and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical hebitat within a quae, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our the register in page

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering three species darly in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern-

The Secramento Fish & Wildle's Office no longer maintains a list of species of concern However, various other agencies and organizations maintain lists of ar-risk species. These lists provide essential information for land management planning and conservation efforts when of

Wetlands

If your project will impact wetlands, oparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Waler Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be December 08, 2009.


عان ا	1	Potamogeton rebbiesii ©	Robern pondweed	Polamogelu -aceae	List 23
i 🖙	1	Rhamnus alnifolia 🖾	a der bucklingen	Rhambaceae	Like 2 2
¹²	1	Ahynchospora alba 🖾	while beaked zush	Сурогасезе	List 2.2
<u>e</u>	-	Schoenoplectus subterminans 📾	water op fusb	Cyperaceae	List 2-3
3	I	Sphäeräisea munraana 📼	Muntoe's deser mallow	Ма уасере	List ノソ
To save keli ADI Selections v	scied reg Dichecka vili opper	iords for inter slugy, click the edicens to Plant Press.	ADD bulton cristekt i rente	 *** 	
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Appendix F

Nevada County and Placer County General Plan Objectives and Policies

Nevada County and Placer County General Plan Objectives and Policies

NEVADA COUNTY GENERAL PLAN

The Nevada County General Plan Open Space Element identifies specific goals, objectives, and policies pertaining to the protection of natural resources and open space (Nevada County General Plan 1995). The General Plan states that areas to be preserved for natural resource preservation should include lands that provide habitat for plants, fish, and wildlife species as well as preserving water quality of major waterways. In addition, protecting corridors located along major stream courses within the Planning Area as a means of protecting and preserving these environmentally sensitive areas from the encroachment of development is encouraged.

Chapter 13, Wildlife and Vegetation, of the Nevada County General Plan identifies the following goals, objectives, and policies for the protection of sensitive resources in the Planning Area:

Goal 13.1 - Identify and manage significant areas to achieve sustainable habitat.

Objective 13.1 - Discourage intrusion and encroachment by incompatible land uses in significant and sensitive habitats.

Policy 13.1 - Where significant environmental features, as defined in Policy 1.17, are identified during review of projects, the County shall require all portions of the project site that contain or influence said areas to be retained as non-disturbance open space through clustered development on suitable portions of the project site, or other means where mandatory clustering cannot be achieved.

The intent and emphasis of such open space designation and non-disturbance is to promote continued viability of contiguous or inter-dependent habitats by avoiding fragmentation of existing habitat areas and preserving movement corridors between related habitats. Vegetation management for the benefit of habitat preservation or restoration shall be considered consistent with the intent of this policy.

Policy 13.2 - As part of Placer County Comprehensive Site Development Standards, include standards to minimize removal of existing vegetation and require installation and long-term maintenance of landscaping in setbacks and buffer areas. These standards shall be applicable to all discretionary projects and to all ministerial projects other than a single-family residence located on an individual lot. Tree removal may be allowed where necessary to comply with

public right-of-way development or dedication, or development of required site access and public utilities. Individual trees or groups of trees shall be protected during construction to prevent damage to the trees and their root systems. Vegetation in proximity to structures shall conform to applicable fire protection standards.

Policy 13.2A - Project review standards shall include a requirement to conduct a site-specific biological inventory to determine the presence of special-status species or habitat for such species that may be affected by a proposed project. The results of the biological inventory shall be used as the basis for establishing land use siting and design tools required to achieve the objective of no net loss of habitat function or value for special-status species.

Where a Habitat Management Plan is deemed appropriate, the Plan shall be prepared to comply with the requirements of the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). The plan shall provide the background data, impact analysis, and mitigation programs necessary to obtain a FESA Section 10(a) and CESA Section 2081 permit authorizing incidental take of federal and state listed threatened and endangered species that occur in areas proposed for future development. Prior to implementation of an adopted Habitat

Management Plan, project applicants proposing the development of a project that would impact a federal or state listed species, or a species that is proposed for listing, shall be individually responsible for obtaining federal and state incidental take permits on a project-by-project basis.

Policy 13.2B - Development projects which have the potential to remove natural riparian or wetland habitat of 1 acre or more shall not be permitted unless:

- a. No suitable alternative site or design exists for the land use;
- b. There is no degradation of the habitat or reduction in the numbers of any rare, threatened, or endangered plant or animal species as a result of the project;
- c. Habitat of superior quantity and superior or comparable quality will be created or restored to compensate for the loss; and
- d. The project conforms with regulations and guidelines of the USFWS, U.S. Army Corps of Engineers, California Department of Fish and Game, and other relevant agencies.

Policy 13.4 - Encourage long-term sustainability and maintenance of landscaped areas.

Policy 13.4A - No net loss of habitat functions or values shall be caused by development where rare and endangered species and wetlands of over 1 acre, in aggregate, are identified during the review of proposed projects. No net loss shall be achieved through avoidance of the resource, or through creation or restoration of habitat of superior or comparable quality, in accordance with guidelines of the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

Policy 13.4B - Habitat that is required to be protected, restored, or created as mitigation for a project's impacts shall be monitored and maintained in accord with a County approved Habitat Management Plan.

Policy 13.4C - The land use designations and associated acreages identified on the proposed General Plan land use maps for Special Development Areas should be modified as necessary at the Specific Plan stage to protect sensitive natural communities and other important biotic resources.

Policy 13.4D The County shall prepare and implement a Habitat Management Plan for rare and endangered species and wetlands habitat while allowing the preparation of individual project habitat management plans as an alternative, including an offsite ecological reserve.

Policy 13.4E - The County shall investigate establishing interagency agreements with adjoining counties where new developments could impact significant natural resource areas shared by adjoining counties. The agreements shall require notification of development projects within one mile of the County's borders and provide for review and comment by affected counties.

Policy 13.4F - To minimize the loss of wildlife habitat and fragmentation, clustering shall be required on parcels of 20 acres in size or larger within the North San Juan and Penn Valley areas, when such parcels are located in areas where the existing parcelization pattern in the immediate vicinity is currently 20 acres or more.

Policy 13.4G - To minimize the loss or disturbance of deer habitat, clustering shall be required on parcels of 40 acres in size or larger in critical migratory deer winter ranges in Rural Regions within the western portion of the County, when such parcels are located in areas where the existing parcelization in the immediate vicinity is currently 40 acres or more.

Policy 13.4H - Non-development buffers shall be maintained adjacent to perennial stream corridors through the use of clustering, the designation of a Planned Development, or the implementation of other siting and design tools. Buffers shall be sufficient in size to protect the stream corridor for movement, as well as provide some adjacent upland habitat for foraging.

Objective 13.2 - Minimize impacts to corridors to ensure movement of wildlife.

See: Policy 13.1

Objective 13.3 - Provide for the integrity and continuity of wildlife environments.

See: Policy 13.1; Policy 13.2

Objective 13.4 - Support the acquisition, development, maintenance, and restoration, where feasible, of habitat lands for wildlife enhancement.

Policy 13.5 - Participate in all bio-regional planning councils, initiated by Federal or State agencies, which involve lands within the jurisdiction of Nevada County. County representatives

on such councils shall be appointed by the Board of Supervisors. The purpose of participation shall be to ensure the policies of the General Plan are complemented by and incorporated into any bio-regional plan encompassing all or part of Nevada County.

See: Policy 13.1

Objective 13.5 - Support, where feasible, the continued diversity and sustain ability of the habitat resource through restoration and protection.

Policy 13.6 - Monitor, through the input of other agencies, the sensitive wildlife and habitat resources of Nevada County to ensure the continued validity and effectiveness of General Plan policies intended to protect, preserve and enhance these resources. Results of monitoring shall be incorporated into the General Plan Update process.

Objective 13.6 - Discourage significant adverse environmental impacts of land development, agricultural, forest, and mining activities on important and sensitive habitats.

See: Policy 13.1

Objective 13.7 - Identify and preserve heritage and landmark trees and groves where appropriate.

Policy 13.8 - As part of Placer County Comprehensive Site Development Standards, include measures applicable to all discretionary and ministerial projects to minimize disturbance of heritage and landmark trees and groves. These measures shall include, but are not limited to, requirements for on-site vegetation inventories and mandatory clustering of development in areas likely to support such vegetation or habitat.

Policy 13.9 - Development in the vicinity of significant oak groves of all oak species shall be designed and sited to maximize the long-term preservation of the trees and the integrity of their natural setting. The County shall adopt a regulation to protect native heritage oak trees and significant oak groves. All native oak tree species with a trunk diameter of 36" or greater shall be protected.

See: Policy 13.2

Objective 13.8 - Minimize removal or disturbance of low elevation oak habitat.

See: Policy 13.8

PLACER COUNTY TREE ORDINANCE

Sites D2/S5 and D6/S6 are located generally in Mixed Coniferous Forest (Table 16-2), which include several native species protected by Placer County. Tree avoidance could be somewhat feasible if these sites are developed; however, construction within either of these sites may require the removal of certain trees for site development. Placer County has a tree ordinance that

mandates a permit be obtained for the removal or disturbance of any tree over six inches dbh (diameter at breast height), with the exception of Foothill/Grey Pine (PCGP, 1994).

PLACER COUNTY GENERAL PLAN

The following is a list of policies within the Natural Resources Section of the Placer County General Plan that provide protection to the biological resources within Placer County and that would apply to both potential pipeline corridors.

WATER RESOURCES

Policy 6.A.1 - The County shall require the provisions of sensitive habitat buffers which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened or endangered. Based on more detailed information supplied as part of the review for a specific project, the County may determine that such setbacks are not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:

- a. Reasonable use of the property would otherwise be denied
- b. The location is necessary to avoid or mitigate hazards to the public
- c. The location is necessary for the repair of roads, bridges, trails, or similar infrastructure
- d. The location is necessary for the construction of new roads, bridges, trails, or similar infrastructure where the County determines there are no feasible alternatives and the project has minimized environmental impacts through project design and infrastructure placement.

WETLAND AND RIPARIAN AREAS

Policy 6.B.1 - The County shall support the "no net loss" policy for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

Policy 6.B.2 - The County shall require new development to mitigate wetland loss in both regulated and non-regulated wetlands to achieve "no net loss" through any combination of the following, in descending order of desirability: (1) avoidance of riparian habitat; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation, including use of a mitigation banking program that provides the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.

FISH AND WILDLIFE HABITAT

Policy 6.C.1 - The County shall identify and protect significant ecological resource areas and other unique wildlife habitats critical to protecting and sustaining wildlife populations. Significant ecological resource areas include the following:

- Wetland areas including vernal pools.
- Stream environment zones.
- Any habitat for rare, threatened or endangered animals or plants.
- Critical deer winter ranges (winter and summer), migratory routes and fawning habitat.
- Large areas of non-fragmented natural habitat, including Blue Oak Woodlands, Valley Foothill Riparian, vernal pool habitat.
- Identifiable wildlife movement zones, including but not limited to, nonfragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway.
- Important spawning areas for anadramous fish.

Policy 6.C.6 - The County shall support preservation of the habitats of rare, threatened, endangered, and/or other special status species. Federal and state agencies, as well as other resource conservation organizations, shall be encouraged to acquire and manage endangered species' habitats.

VEGETATION

Policy 6.D.4 - The County shall ensure that landmark trees and major groves of native trees are preserved and protected. In order to maintain these areas in perpetuity, protected areas shall also include younger vegetation with suitable space for growth and reproduction.