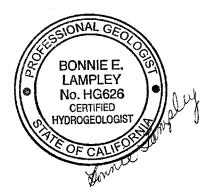


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## HYDROLOGIC EVALUATION FOR PROPOSED QUARRY CHANGES CRYSTAL CREEK AGGREGATES

AUGUST 2022



PREPARED FOR:

CRYSTAL CREEK AGGREGATES 10936 IRON MOUNTAIN ROAD REDDING, CA 96001

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### INTRODUCTION

This report presents a hydrologic evaluation of the proposed quarry expansion at the Crystal Creek Aggregates (CCA) facility on Iron Mountain Road, Redding, California (**Figures 1** and **2**).

Existing CCA plant facilities include a rock crushing/screening plant, washing operation, mobile office trailer, truck scales, diesel-fuel storage tanks (1,000 and 20,000 gallons), one waste-oil tank (350 gallons), two motor oil tanks and one lubricating oil tank (90 gallons each), and five settling and two recycle ponds.

The proposed changes include an increase in the total annual amount of aggregate to be processed from 250,000 to 500,000 tons. The existing Concrete Recycle Area location and operation, for which an administrative permit was issued and subsequently reissued by the County due to the Carr Fire, is proposed to be removed as a Project component. The estimated 2.80-acre Concrete Recycle Area is proposed to be used for aggregate stockpiling.

The amount of aggregate mined will be increased, as will the yearly blasting maximums. The hours of operation will stay the same as currently permitted. The height of the Quarry high walls and bench widths will be increased as will the lake size and depth upon reclamation of the site. The estimated amount of aggregate proposed to be mined will increase from 15.92 million tons to 25.4 million tons. The estimated life of the mining operation will increase from the end of Year 2072 by 27 years to end of the Year 2101.

The existing approved Use Permit Area of 110.69-acres and the existing approved 110.69-acre Reclamation Plan Area will be maintained.

The scope of work included site visits, review of reports prepared by others related to geologic conditions, estimation of existing and future water budgets for the new lake and site changes, evaluation of potential impacts from changes in the water budget, and evaluation of potential water-quality impacts from the expanded operations. Existing and future site plans, and the size and volume for the proposed quarry excavation, were supplied by Mr. Duane Miller, PE, on behalf of Crystal Creek Aggregates.

The work was conducted by Ms. Bonnie Lampley, California Certified Hydrogeologist (CHG 626).

### SUMMARY

### New Lake Water Levels

After filling, the new lake would overflow in average years, and would have minimal to no overflow in dry years (**Figures 10** and **11**). The water level would vary seasonally by less than 5 feet.

Changing the runoff factor has some effect on model results; if only 10% of the runoff is routed to the lake, seasonal water-level changes will be similar and it will not dry out in the summer.

Modeling results are more sensitive to changing the leakage factor. If the leakage factor is increased by an order of magnitude (to 0.003 feet/day), the water levels would show more variability, with the variation less than 10 feet. If the leakage factor is increased by two orders of magnitude (to 0.03 feet/day), the new lake may dry out seasonally. Although the permeability of the material that will form the base of the lake is unknown, it is unlikely to be as permeable as 0.03 feet/day ( $1 \times 10^{-5}$  cm/sec). Existing ponds at the site do not dry out over the summer. This implies either groundwater contribution to maintaining water levels or low permeability to prevent leakage of collected surface water (more likely the latter, based on observations of the amount of groundwater seepage in June 2019).

### WATER BUDGET

The major changes to the water budget are as follows:

- Increase in water stored in Site water bodies. The increase would range from approximately 500 to 3,100 acre-feet more than currently held.
- More total inflow to the system because of the larger area (new lake surface) that receives direct precipitation. The increase could be approximately 40 acre-feet per year.

Even though the overall area of the quarry + upland watershed remains the same, the relative change in percent covered by the open water body means there is more direct precipitation (vs. watershed runoff) into the system. This is because there is less total evapotranspiration and infiltration losses in the watershed because of the smaller relative area.

Also, because there is less total "undeveloped" watershed, the amount of upland runoff into the system will be between approximately 75 and 100 acre-feet per year less.

- Leakage to groundwater will be higher in the future, because of the greater area of the new lake relative to the existing ponds. The total leakage, however, will remain an insignificant percentage of the total water budget.
- More evaporation because of the greater surface area of the new lake. The increase could be approximately 65 to 130 acre-feet per year.

• Less offsite runoff (denoted as "overflow" in the figures in **Appendix D**) in both drought average periods. The decrease could average approximately 75 acre-feet/year.

The decrease in offsite runoff during droughts represents approximately 25% less runoff to the tributary to Middle Creek. This would represent a net 1.4% reduction flow to Middle Creek below CCA (25% less off-site discharge over 5.5% of the total Middle Creek drainage area). The reduction in off-site discharge would occur only during the wet season.

Changes in inflow from groundwater, are assumed to be minimal. Because of the nature of the geologic materials (relatively impermeable hard rock with few open fractures), it is unlikely that the new lake would act as a groundwater sink. Some groundwater seepage zones may be intercepted by the expanded excavation, but the probability that more seepage zones than are currently observed will be encountered at depth is unlikely in that fractures generally become less prevalent with depth and the existing seepage zones are associated with the contact between the weathered overburden and more competent bedrock.

### WATER QUALITY

Water management and stormwater-runoff control in the future will be done similarly to the current operations. During mining in each phase, runoff from the disturbed areas will be routed to temporary detention basins within the phase footprint, as has been done historically and currently.

Groundwater inflow into each phase also will be routed to the temporary detention basins, as currently done. Once excavation in a phase proceeds such that deeper basins are developed, groundwater seepage into the basin will be pumped out for discharge to either temporary basins or existing ponds. Groundwater production from mined areas is not expected to be greater than current seepage rates because as the quarry is deepened, the potential for groundwater occurrence decreases.

Overall, there will be less offsite discharge once the new lake is developed than currently occurs.

Runoff from the new batch plant will be routed to Recycle Pond #1, similarly to the runoff from the existing crushing and screening plant. If the Recycle Ponds discharge, it is routed through the Settling Ponds, eventually to be discharged from Settling Pond #3, along with all other site stormwater that potentially flows to Middle Creek.

There is no evidence that historic runoff from CCA has adversely affected surface-water quality in Middle Creek, and there is evidence of other influences that affect the creek's water quality.

Therefore, it is unlikely that future operations will adversely affect water quality in Middle Creek.

### SITE SETTING

### EXISTING PONDS AND DRAINAGE

**Figure 2** shows the existing site plan, with an emphasis on drainage features and ponds; **Figure 4** shows a schematic diagram of the existing drainages and water-management features.

Drainage and water is managed by a network of ponds, ditches, and piping. The major source of process water for the Facility is from upland runoff to Ponds #4 and #5. These two ponds are hydraulically connected in the subsurface through a layer of crushed rock approximately 10 feet thick. The two ponds receive runoff from the upland hills west of the Plant Area, from the Existing Quarry, and from the Plant Area (equipment storage, stockpile areas, concrete recycle area, and topsoil stockpile area). **Table 1** shows the characteristics of the existing ponds:

Ponds	Comment	Area	Depth	Volume
		acres	feet	acre-feet
Settling Pond 1	Usually dry in dry season	0.5	15	3
Settling Pond 2	Usually dry in dry season	0.2	15	1
Settling Pond 3	Always contains water	0.5	15	2
Existing Pond 4	Always contains water	1.9	25	14
Existing Pond 5	Always contains water	2.2	30	24
Recycle Ponds	Always contain water	0.5	15	<u>3</u>
	TOTALS	5.8		46

### TABLE 1. EXISTING POND CHARACTERISTICS

During regular operations, water is pumped from Pond #5 to Settling Pond #1 and Recycle Pond #2. During storm events, water can be released as needed from Pond #4 through a slide gate. Stormwater released from Pond #4 is routed through a 36-inch corrugated metal pipe (CMP) culvert to the drainage ditch immediate east of Settling Ponds #2 and #3; the valve at the point of discharge of the 36-inch CMP to the ditch is always closed, and only opened during large storm events. Just south of Settling Pond #3, the small drainage ditch connects with a larger drainage ditch; the larger ditch discharges to Middle Creek near where Iron Mountain Road crosses Middle Creek.

Water from Pond #4 is routed to Recycle Pond #2 from Settling Pond #1; Recycle Pond #2 also receives overflow from Recycle Pond #1. During operations, water for aggregate washing is pumped from Recycle Pond #2 by two centrifugal pumps (one 4-inch and one six-inch). If needed, make-up water for aggregate washing is provided by Shasta Community Services District (SCSD; formerly water was provided by Keswick CSD which is now part of SCSD). Typical usage is 1,000 gallons/eight-hour shift, up to 12 hours/day. This equates to approximately one gallon per minute on a daily basis (1,000 gallons/8 hours = 125 gallons/hour x 12 hours = 1,500 gallons  $\div$  1440 minutes/day).

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The used wash water that has passed over the aggregate is returned to Recycle Pond #1 after the addition of flocculent to aid in settling the fine particulates. Approximately every three days, the fine material that is washed off the aggregate and into Recycle Pond #1 is cleaned out and moved to an overburden pile, to be used in Site reclamation in the future. Washed aggregate is stored in various Stockpile Areas, in the eastern part of the Site.

The two Recycle Ponds are connected by a 48-inch corrugated metal pipe (CMP). Recycle Pond #2 can overflow to a ditch which routes discharge to Settling Pond #1. Settling Ponds #1, #2, and #3 are connected in series, with Pond #3 the farthest downgradient. Settling Pond #3 discharge to the small ditch along the eastern side of the ponds, and thence to the larger ditch that is tributary to Middle Creek.

### PROPOSED LAKE AND DRAINAGE

**Figure 3** shows the proposed drainage features; **Figure 5** shows a schematic diagram of the proposed drainages and water-management features.

Drainage features in the Plant Area (eastern portion of the Site) will remain the same, with the Recycle Ponds, Settling Ponds #1, #2, and #3, and Ponds #4 and #5 unchanged. Drainage in the Mining Area (west of the Plant Area) will be modified because of the expansion of the quarry footprint. Overall drainage areas will remain the same, but the distribution of the drainage will change.

Water-supply to, and runoff from, the new batch plant will be routed to and from the Recycle Ponds, similar to the water management for the existing crushing plant.

**Figure 6** shows the general overall future drainage areas for the Site. For the Site as a whole, the existing and future total drainage area are the same. For modeling purposes (discussed below), L&A divided the Site into three areas:

- New Lake drainage area (45.1 acres) which represents the area upgradient of the quarry excavation.
- Quarry Excavation area (51.2 acres) which represents the area of the proposed excavation, including the New Lake. Within this area, the New Lake will cover 35.64 acres at its water-surface elevation of 736 feet MSL.
- Site Area Not Draining to Quarry (84.5 acres) which represents the remainder of the Site, including the Plant Area.

Note that these areas do not correspond to specific Project areas referenced in other documents because some of the drainage areas extend beyond the CCA property boundary and the drainage boundaries do not necessarily correspond to Project areas defined in the Reclamation Plan, for example.

### **REGIONAL HYDROLOGIC SETTING**

The Site is located within the Middle Creek watershed, along the northern boundary (**Figure 1**). To the north is the Rock Creek watershed. The Middle Creek watershed covers 2,890 acres (the area was scaled from the USGS topographic map using AutoCAD v. 2018).

The drainage area of the quarry area (both existing and proposed) is approximately 160 acres. The CCA drainage area represents approximately 5.5% of the Middle Creek drainage area. Drainage from the CCA site eventually enters Middle Creek approximately 1.3 miles upstream of its confluence with the Sacramento River.

### REGIONAL AND LOCAL HYDROGEOLOGIC SETTING GEOLOGY

The following description of the regional and local geology is taken from the Geotechnical Report (Bajada Geosciences, April 2020, as revised August 2022). **Appendix A** contains the geologic and lineation maps, and geologic cross sections, from that report.

The Site is located in the eastern Klamath Mountains within the Klamath Mountains geomorphic Geologic Province of California. The Klamath Mountains form a geologic province that extends from northern California to Southern Oregon. In California, the Klamath Mountains province extends from the Pacific Ocean to the Great Valley.

The quarry is located within the Eastern Klamath terrane of the Klamath Mountains geomorphic Geologic Province, and is about 180- to 400-million years old (Silurian-Devonian to Jurassic). The Eastern Klamath terrane is composed of three subterranes - Redding, Trinity, and Yreka subterranes. The Redding subterrane consists of Mississippian to Devonian-age metavolcanic and metasedimentary rocks. Formations within the Redding subterrane consist of the Baird, Bragdon, and Kennett Formations, the Mule Mountain stock, Balaklala Rhyolite, and Copley Greenstone. Those formations are locally faulted into place. Superjacent rocks consist of alluvium, colluvium, local terrace, and landslide deposits.

The existing quarry highwalls expose Mule Mountain Stock (Dmm), Copley Greenstone (Dc), and epidote and/or chloritic amphibolite (Da). These materials are unconformably in contact in some locations and have been juxtaposed by faulting in other locations. In areas outside of the active quarry face, Dmm and Dc are visible in outcrop, as float on the ground surface, and exposed within scoured drainages.

Granitics of the Mule Mountain Stock consist of granodiorite, albite granite, and trondhjemite that increase in hardness and competency and decrease in weathering with depth. Regolithic and saprolitic soils associated with weathering produce overburden thicknesses ranging from a few feet to over 20 feet. Below the overburden, weathering decreases from highly weathered to fresh over thicknesses ranging from about 5 to 20 feet. These zones of weathering are often observed penetrating relatively fresh rocks along discontinuities. Moderately weathered to fresh Mule Mountain Stock ranges from weak rock to strong rock.

The Copley greenstone is generally hard, dense, and locally has been sulfide enriched to exhibit pyrite mineralization. Generally, the greenstone observed within the quarry ranges from medium strong to very strong

Copley greenstone is massive to moderately fractured with persistent discontinuities that are moderately to very widely spaced, partially open to tight, undulating to planar, and generally rough. Few open apertures were observed, and those present were filled with calcium carbonate, epidote, and quartz. Some discontinuity planes appeared to have a relatively thin coating of iron oxide, zinc oxide, calcium carbonate or other coatings. Few discontinuities were observed to be open and unfilled except where prior blasting and mining had occurred.

Faulting and lineations in the existing quarry area trend generally east-west (see the lineation map in **Appendix A**).

### HYDROGEOLOGY

Groundwater in the Site vicinity can occur in the small areas of alluvial deposits in stream bottoms, in weathering zones atop bedrock, and within the bedrock (hard rock). In hard rock, groundwater occupies openings made by faulting or fracturing, known as secondary porosity. Groundwater does not occur within the rock itself, as in sedimentary deposits (alluvial material and to a lesser degree, weathered bedrock), where groundwater occupies the spaces between particles, known as primary porosity. Generally, the porosity of hard rocks is much less than in sedimentary rocks: Porosity in sedimentary rocks typically ranges between 30 and 60% and in hard rocks similar to those in the Project vicinity (granitics and greenstone) it can be as low as 1 to 2%, although weathered zones can have porosities similar to sedimentary rocks.

Related to porosity is a characteristic known as hydraulic conductivity. A material has high hydraulic conductivity if there are many connected pore spaces or large fractures; that is, groundwater can move more rapidly through these kinds of materials. A material has low hydraulic conductivity if the pore spaces are not well connected, continuous, or large. Groundwater cannot move easily through these kinds of materials.

Based on the description of the rocks in the quarry area, it is likely that both the porosity and hydraulic conductivity of the quarry rocks are low. The Geotechnical Report describes that the fractures, where present, are partially open to tight, with few observed to be open. Most are filled with calcium carbonate, epidote, and quartz.

Groundwater seepage was observed in only two locations within the existing quarry area, along fault planes and near the weathered-fresh bedrock interface (**Figure 2** shows seepage locations in June 2019). CCA staff report that Ponds #4, #5, and Settling Pond #3 remain full year round, without addition of water. This suggests that, at least in part, groundwater seepage occurs year round and helps maintain lake water levels, in that there is no surface-water runoff from the uplands in the summer.

Well logs for water wells in the vicinity of the Site, on file with the Department of Water Resources (DWR), show similar geologic materials as described in the Geotechnical Report

(although the driller's descriptions often mislabel rock types). **Figure 7** shows a map of the vicinity wells, for logs that had sufficient location information. There were 28 wells of record in the DWR database. All of the wells of record are located to the north (within the Rock Creek drainage) and to the south of the Site (mostly in the Salt Creek drainage). There appear to be only four wells of record within the Middle Creek drainage, in the Site vicinity (numbers 405981, 485937, 705923, and 957748). These wells are all located close to Middle Creek, south to southwest of the Site and approximately one-half to one mile away from the Site.

Based on the geologic mapping of the Site in the Geotechnical Report, we assume that the predominant direction of groundwater movement is to the east, following the trend of the faults and lineations, and the general fall of the topography towards the Sacramento River. Based on this, there are no groundwater wells downgradient of the Site.

Potable water in the vicinity, and at the Site, is provided by the Shasta CSD (and previously, the Keswick CSD, which is now part of the Shasta CSD). **Figure 8** shows a map of the potable water suppliers in the vicinity.

### WATER-BUDGET

To evaluate the various potential hydrologic impacts from the expanded quarry operations, L&A developed a hydraulic-capacity model (in an Excel<sup>TM</sup> spreadsheet) that accounts for daily inflows to and outflows from the new lake, the quarry area, and the plant area. The model uses various inputs (precipitation, evaporation, rock characteristics, drainage areas, etc.) to estimate how water will move onto the Site, through the new lake, and into the subsurface. Model outputs can be plotted vs. time to show potential seasonal changes in various factors (*e.g.*, lake depth, run on, runoff, evaporation, etc.).

The modeling evaluated each of the three phases, which will have the following approximate areas:

Phase 1	22.66 acres	43% of area
Phase 2	21.26 acres	40% of area
Phase 3	8.82 acres	17% of area

The modeling used the following logic:

- ➤ The maximum lake depth is assumed to be 96 feet, based on a base elevation of 640 feet MSL and a design high-water level of 736 feet MSL. Appendix C shows the calculations for volume vs. depth and volume vs. area used in the model, for the entire new lake and for each of the proposed phases.
- Starting storage (in acre-feet) for each day equals the final storage from the previous day.
- Total daily inflow is calculated by adding the direct precipitation (maximum lake area in acres × daily precipitation in feet), groundwater inflow (if used), and stormwater inflow (in acre-feet). The stormwater inflow is routed through the phases based on which phases are

operational.

In years 1 through 20, it is assumed that only Phase 1 will be active; therefore, in those years, all upland runoff is routed to Phase 1.

In years 20 through 40, it is assumed that Phase 1 will be completed and Phase 2 will be active; therefore, in those years, upland runoff is routed to Phase 2 based on its relative size to the other phases. The remaining upland runoff is routed to Phase 1. The overflow from Phase 2 also is routed to Phase 1 because the outlet for the quarry area will be within the Phase 1 footprint.

In years 40 through 50, it is assumed that Phase 3 will be actively mined; in those years upland runoff is routed to each phase based on its relative size. Overflow from Phases 2 and 3 is routed through Phase 1.

In years 50+, it is assumed that the quarrying will be completed and the entire lake will be established.

- ➤ Total daily outflow is the evaporation (area covered by water × daily evaporation rate in feet) and leakage, assumed to be 0.0003 feet/day (1 × 10<sup>-7</sup> cm/sec).
- The daily net change in storage is calculated by subtracting the outflow from the inflow. The net change then is subtracted from the beginning storage to yield the final storage at the end of each day. If final storage is greater than the maximum allowable volume, the volume difference spills out of the lake.

Several model runs were performed, as follows, with the estimated time frame for each phase's operation based on a total operating period of 50 years, approximately apportioned by the relative size of each phase:

Years 1 – 20	Phase 1 only
Years 21 – 40	Phase 2, with overflow passed to the Phase 1 area
Years 41 – 50	Phases 2 and 3, with overflow passed to the Phase 1 area

Phase 1 receives the overflow from the other two phases because the outlet for the future quarry lake will be in the Phase 1 area.

### INPUT VARIABLES

### PRECIPITATION

Precipitation values were taken from daily precipitation recorded at Whiskeytown for the period water year 1997 to date.<sup>1</sup> Both the entire data set and a subset of the data representing drought conditions were used in the modeling. The drought subset was selected using a graph of the cumulative departure from average water-year precipitation (**Figure 9**). For a cumulative

<sup>&</sup>lt;sup>1</sup> California Data Exchange Center; http://cdec.water.ca.gov/dynamicapp/QueryDaily?s=WHI&d=03-Jul-2019+12:36 .

departure analysis, the average precipitation for the entire period is calculated, and then the departure or difference in annual precipitation from the average is calculated for each water year. The departure from average annual precipitation is cumulated. This cumulative value then is plotted vs. water year. A downward trend of cumulative departure indicates a period during which precipitation was less than average. Conversely, an upward trend indicates a period during which precipitation was greater than average. A period of average precipitation is one in which the beginning and ending cumulative values are the same. The period 2007 to 2017 was taken as the subset for drought modeling because the period had an extended dry period.

The annual average precipitation at Whiskeytown is 60.8 inches; the annual average drought period precipitation used in the model was 44.2 inches.

### GROUNDWATER

The model assumes a steady 10 gpm of groundwater inflow, although eliminating groundwater inflow does not substantially change modeling results. In the predictive modeling, it is assumed that 10 gpm of groundwater inflow will be routed through the quarry to maintain pond levels in the Plant Area.

### STORMWATER

Stormwater inflow to the model is calculated from the various watershed areas, as shown in **Figure 4**. Stormwater inflow to the lake was calculated to be 50% of the total rainfall on the watershed above the lake; that is, for each day of the modeling period in which there was rain, the rainfall amount was multiplied by 45.1 acres and then by 0.5. Stormwater runoff from the Plant area was calculated similarly. The model, however, does not route Plant Area stormwater through each of the Plant ponds; rather, the total storage of the ponds is added together, for ease of calculation.

### **EVAPORATION**

Evaporation was based on typical values of reference evapotranspiration as published by the California Department of Water Resources, August 2008, *Estimating Irrigation Water Needs of Landscape Plantings in California*, Appendix A – Table 1, Zone 14. Zone 14 encompasses the Sacramento Valley and the eastern foothills of the Coast Range, including the southwestern portion of Shasta County.

### Leakage

A relatively slow leakage (hydraulic conductivity) of 0.0003 feet per day  $(1 \times 10^{-7} \text{ cm/sec})$  was assumed for the bottom of the lake, based on the description of the geologic materials and the fact that the existing lakes retain water year-round without water addition during the dry season.

### **MODELING RESULTS**

**Appendix D** contains graphs of the results of pond modeling for each phase in 20-year time increments. It is unknown exactly how each phase will be configured; therefore, the modeling for the various phases should be considered approximate. **Figures 10** and **11** show graphs of the

results for the entire new lake in years 50+, for average and drought scenarios, respectively. On these figures, the thick blue line is the pond depth, the thin red line is inflow, and the medium dashed blue line is overflow.

### NEW LAKE WATER LEVELS

After filling, it would overflow in average years, and would have minimal to no overflow in dry years (**Figures 10** and **11**). The water level would vary seasonally by less than 5 feet.

Changing the runoff factor has some effect on model results; if only 10% of the runoff is routed to the lake, seasonal water-level changes will be similar and it will not dry out in the summer.

Modeling results are more sensitive to changing the leakage factor. If the leakage factor is increased by an order of magnitude (to 0.003 feet/day), the water levels would show more variability, with the variation less than 10 feet. If the leakage factor is increased by two orders of magnitude (to 0.03 feet/day), the new lake may dry out seasonally. Although the permeability of the material that will form the base of the lake is unknown, it is unlikely to be as permeable as 0.03 feet/day ( $1 \times 10^{-5}$  cm/sec). Existing ponds at the site do not dry out over the summer. This implies either groundwater contribution to maintaining water levels or low permeability to prevent leakage of collected surface water (more likely the latter, based on observations of the amount of groundwater seepage in June 2019).

### CHANGES IN WATER BUDGET

To evaluate how operation of the new lake may change the overall Site water budget, the daily values were aggregated to yearly totals for the various modeling scenarios and phases. **Appendix E** contains the summary sheets of those calculations.

**Table 2** summarizes the yearly totals to overall annual averages, to compare pre-Project and post-Project water budgets.

The major changes to the water budget are as follows:

- Increase in water stored in Site water bodies. The increase would range from approximately 500 to 3,100 acre-feet more than currently held.
- More total inflow to the system because of the larger area (new lake surface) that receives direct precipitation. The increase could be approximately 40 acre-feet per year.

Even though the overall area of the quarry + upland watershed remains the same, the relative change in percent covered by the open water body means there is more direct precipitation (vs. watershed runoff) into the system. This is because there is less total evapotranspiration and infiltration losses in the watershed because of the smaller relative area.

Also, because there is less total "undeveloped" watershed, the amount of upland runoff into the system will be between approximately 75 and 100 acre-feet per year less.

- Leakage to groundwater will be higher in the future, because of the greater area of the new lake relative to the existing ponds. The total leakage, however, will remain an insignificant percentage of the total water budget.
- More evaporation because of the greater surface area of the new lake. The increase could be approximately 65 to 130 acre-feet per year.
- Less offsite runoff (denoted as "overflow" in the figures in **Appendix D**) in both drought average periods. The decrease could average approximately 75 acre-feet/year.

WATER-BUDGET ITEM	AVERAGE			DROUGHT		
WATER-BUDGET TIEIW	EXISTING	FUTURE	DIFFERENCE	EXISTING	FUTURE	DIFFERENCE
Direct Precipitation on Water Bodies	59	198	138	58	189	132
Runoff to Ponds/Lake	325	232	-93	293	218	-76
TOTAL INFLOW	400	446	46	367	423	56
Leakage	2	5	3	1	4	3
Evaporation	53	117	65	53	184	131
Overflow from Site	337	260	-77	309	235	-74
TOTAL OUTFLOW	397	449	52	364	423	59

 TABLE 2. ESTIMATED ANNUAL CHANGES IN WATER BUDGET

The decrease in offsite runoff during droughts represents approximately 25% less runoff to the tributary to Middle Creek. This would represent a net 1.4% reduction flow to Middle Creek below CCA (25% less off-site discharge over 5.5% of the total Middle Creek drainage area). The reduction in off-site discharge would occur only during the wet season.

Changes in inflow from groundwater, are assumed to be minimal. Because of the nature of the geologic materials (relatively impermeable hard rock with few open fractures), it is unlikely that the new lake would act as a groundwater sink. Some groundwater seepage zones may be intercepted by the expanded excavation, but the probability that more seepage zones than are currently observed will be encountered at depth is unlikely in that fractures generally become less prevalent with depth and the existing seepage zones are associated with the contact between the weathered overburden and more competent bedrock.

### WATER-QUALITY

Water quality at the Facility has been regulated by the Central Valley Regional Water Quality Control Board (CVRWQCB) through a series of permits over the years. Prior to 2015, the Facility was regulated under National Pollution Discharge Elimination System (NPDES) permits, which were renewed every five years. The last NPDES permit was rescinded in 2015, and the Facility currently is covered under the General Industrial Stormwater Permit (GISP). Monitoring of pond and runoff water quality was, and is, conducted under all of these permits; **Appendix F** contains summaries of the monitoring programs under the various permits.

Factors that can influence the water quality of stormwater runoff or stored water at the Facility include natural and man-made sources of particulates or chemicals. Natural sources of particulates are undeveloped or unpaved areas; currently, the main area of undeveloped runoff area is the upland watershed above the quarry area.

Potential water-quality contaminants have been described in two reports:

- Potential salinity-related water-quality issues and their control are described in the *Salinity Evaluation and Minimization Plan* (Salinity Plan).<sup>2</sup>
- Potential issues related to chemicals and fuels used and stored at the Facility are described in the *Spill Prevention Control and Countermeasures Plan (SPCCP)*.<sup>3</sup>

Because issues related to the use, storage, and control of man-made chemicals at the Facility have been discussed in the above-referenced reports, they will not be discussed herein. Evaluation of potential impacts of stormwater runoff from the Facility have not previously been presented, and are discussed herein.

Stormwater runoff from the Facility is routed through the various ponds, with all but a small portion eventually discharged from Settling Pond #3 (see description of water management, pages 4 and 5 of this report). Stormwater from Pond #4 can be routed around the Settling Ponds and discharged directly to the ditch that is tributary to Middle Creek, but this has seldom occurred (pers. comm., J. Comingdeer to B. Lampley, 2020).

Sampling of discharge from Settling Pond #3 and Middle Creek (the receiving water) was conducted between 2004 and 2014, under previous NPDES permits. Sampling of Middle Creek is no longer required under the GISP. To assess whether Facility discharge may affect water quality in Middle Creek, **Appendix E** contains data tables of water-quality testing results from Settling Pond #3, and the upstream and downstream points on Middle Creek; data were provided by CCA staff. **Table 3** summarizes the differences in upstream vs. downstream values in Middle Creek, and offsite discharge (from Settling Pond #3 only; there are no data from the direct discharge from Pond 4 because that discharge point is so infrequently used).

<sup>&</sup>lt;sup>2</sup> Land Designers, Inc., February 2013, Salinity Evaluation and Minimization Plan.

<sup>&</sup>lt;sup>3</sup> Land Designers, Inc., June 2018, Spill Prevention Control and Countermeasures Plan (SPCCP) for Crystal Creek Aggregates, Redding, California.

### TABLE 3. COMPARISON OF WATER QUALITY OF OFFSITE DISCHARGE VS. MIDDLE CREEK

Parameter	Differences
Specific conductance (μmhos/cm)	Samples from 2008 - 2012; SP#3 always higher than M.C.; downstream M.C. usually slightly higher than upstream M.C., with one exception.
Total dissolved solids (mg/L)	Samples from 2010 - 2012; SP#3 always higher than M.C.; downstream M.C. slightly higher than upstream M.C.
pH (units)	Samples from 2004 - 2014; SP#3 usually lower than M.C.; downstream M.C. higher than upstream M.C.
Total suspended solids (mg/L)	Samples from 2004 - 2014; SP#3 sometimes higher, sometimes lower than M.C.; downstream M.C. sometimes higher than upstream M.C. and CCA runoff.
Settleable solids (mg/L)	Samples from 2004 – 2009; all points non-detected.
Turbidity	Samples from 2004 - 2014; SP#3 always higher than M.C.; downstream M.C. sometimes higher than upstream M.C.
Hardness (mg/L)	Samples from 2004 - 2012; SP#3 always higher than M.C.; downstream M.C. sometimes higher than upstream M.C.
Aluminum (μg/L)	One sample, 2012; SP#3 higher than M.C. upstream, but M.C. downstream significantly higher than SP#3 and upstream M.C.
Arsenic (μg/L)	One sample, 2006; SP#3 (0.5) higher than M.C. upstream (0.3), M.C. downstream (0.4) higher than upstream M.C.
Cadmium (µg/L)	One sample, 2006; SP#3 and M.C. upstream nondetected, M.C. downstream (1.45) higher than upstream M.C.
Chromium (μg/L)	One sample, 2006; SP#3 (1.5) higher than M.C. upstream (0.9), M.C. downstream (1.1) higher than upstream M.C.
Copper (µg/L)	Two samples, 2006; SP#3 (2.5-3.9) higher than M.C. upstream (1.4-1.8), M.C. downstream the same as upstream M.C.
Iron (μg/L)	One sample, 2012; SP#3 higher than M.C. upstream, but M.C. downstream significantly higher than upstream M.C.
Lead (µg/L)	Two samples, 2006 & 2012; SP#3 lower than M.C. upstream.
Manganese (µg/L)	One sample, 2012; SP#3 (112) higher than M.C. upstream (8.1), M.C. downstream (84.4) higher than upstream M.C.
Mercury (µg/L)	One sample, 2006; SP#3 (2.05) lower than M.C. upstream (2.61), M.C. downstream (2.49) lower than upstream M.C.
Nickel (µg/L)	One sample, 2006; SP#3 (0.8) higher than M.C. upstream (0.3), M.C. downstream the same as upstream M.C.
Silver (µg/L)	One sample, 2006; SP#3 (0.8) lower than M.C. upstream and downstream.
Zinc (μg/L)	Samples from 2005 - 2009; SP#3 always higher than M.C.; downstream M.C. sometimes higher and sometimes lower than upstream M.C.

The higher pH sometimes observed in the downstream vs. upstream samples from Middle Creek suggests that there are influences other than CCA runoff on the downstream water quality. Because the CCA runoff samples usually are of lower pH than the Middle Creek samples, it is not possible that the CCA runoff is causing the higher pH in the downstream samples.

Likewise, TSS in downstream samples was periodically higher than in both CCA runoff and upstream samples. This implies an additional source of TSS beyond CCA runoff.

Hardness was always higher in the CCA runoff than in the upstream Middle Creek samples, and the downstream Middle Creek samples were higher than the upstream samples. This suggests that CCA could have affected the hardness in Middle Creek, but it is not clear that the upstream vs. downstream differences can be attributed solely to CCA in light of the evidence that there are other influences, also.

The limited data on metals suggests that there was generally no impact on Middle Creek from CCA runoff. If there were impacts, they were slight. Note that metals derived from runoff from the existing mines in the upland watershed have been accounted for in the historic data.

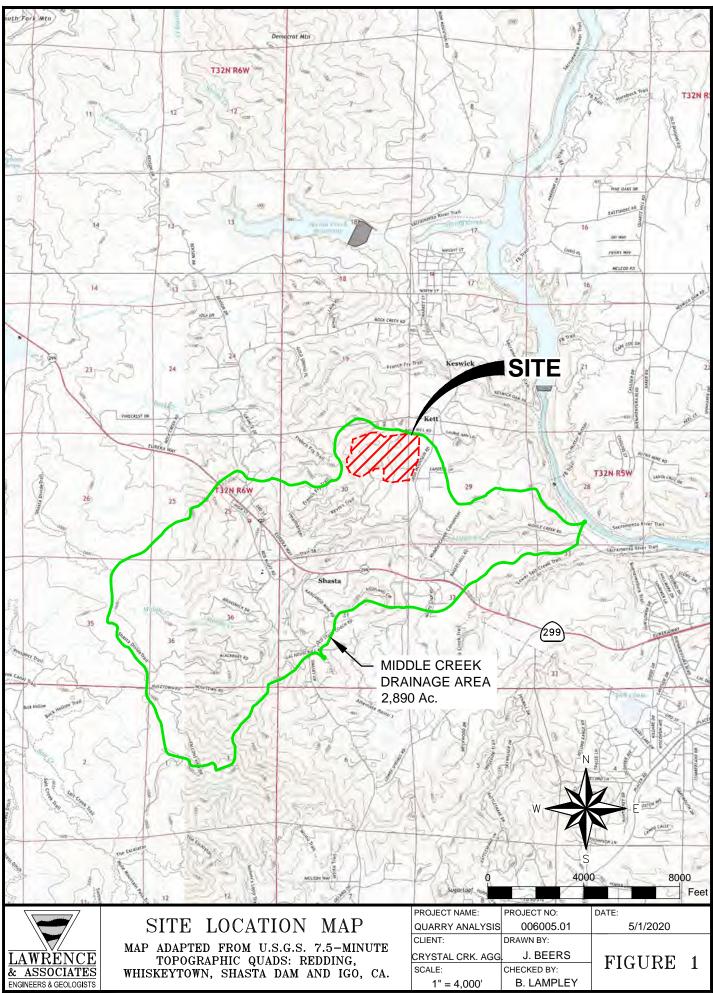
Therefore, it does not appear that historic runoff from CCA has adversely affected surface-water quality in Middle Creek, and there is evidence of other influences that affect the creek's water quality.

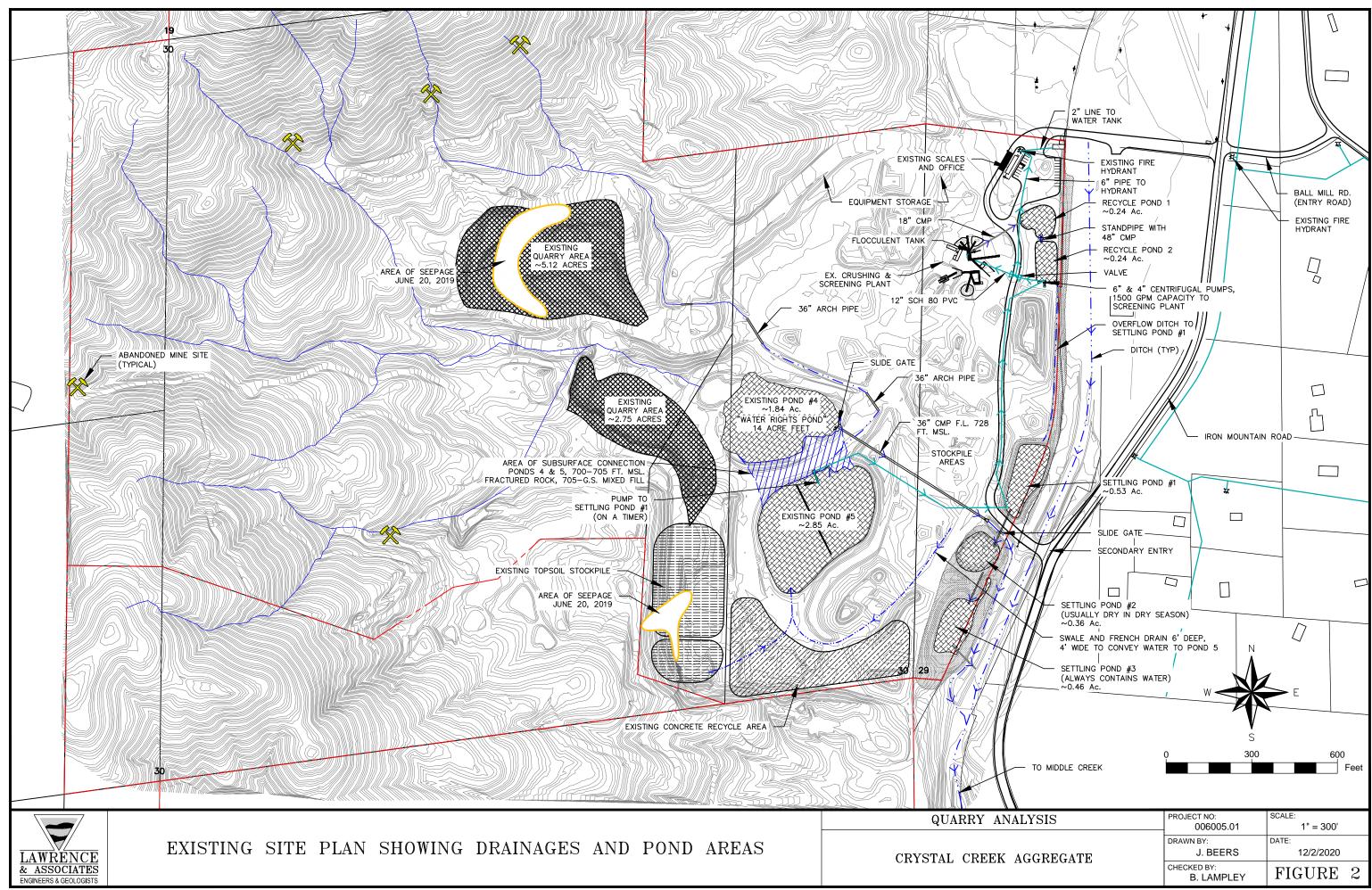
Water management and stormwater-runoff control in the future will be done similarly to the current operations. During each phase, runoff from the disturbed areas will be routed to temporary detention basins within the phase footprint, as has been done historically and currently.

Groundwater inflow into each phase also will be routed to the temporary detention basins, as currently done. Once excavation in a phase proceeds such that deeper basins are developed, groundwater seepage into the basin will be pumped out for discharge to either temporary basins or existing ponds. Groundwater production from mined areas is not expected to be greater than current seepage rates because as the quarry is deepened, the potential for groundwater occurrence decreases.

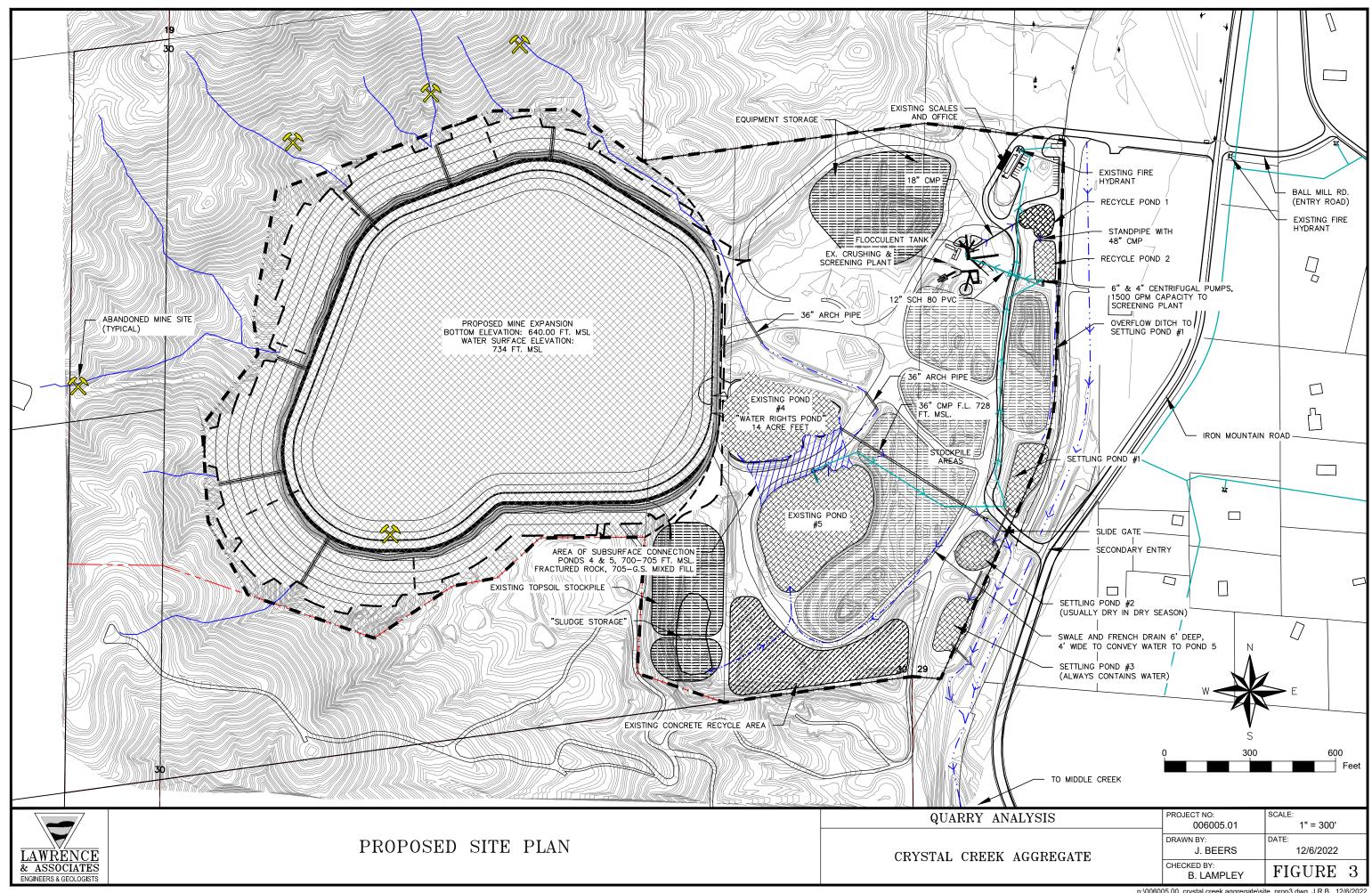
Overall, there will be less offsite discharge once the new lake is completed than currently occurs (**Table 2**, page 12).

Therefore, it is unlikely that future operations will adversely affect offsite runoff.

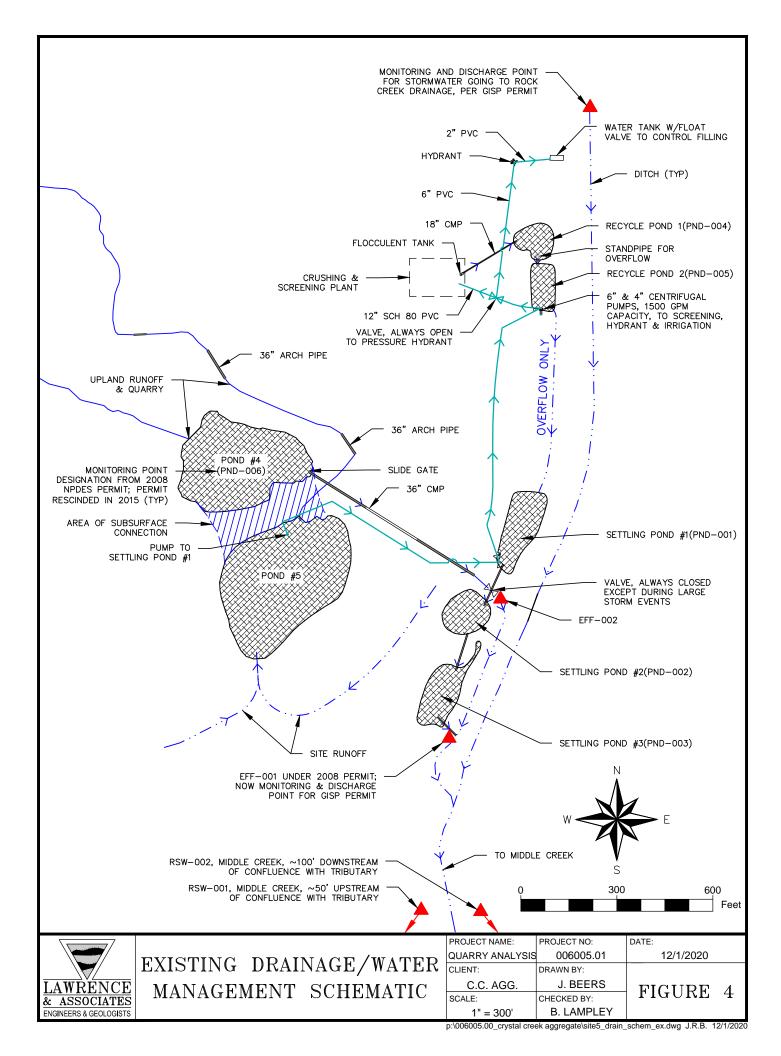


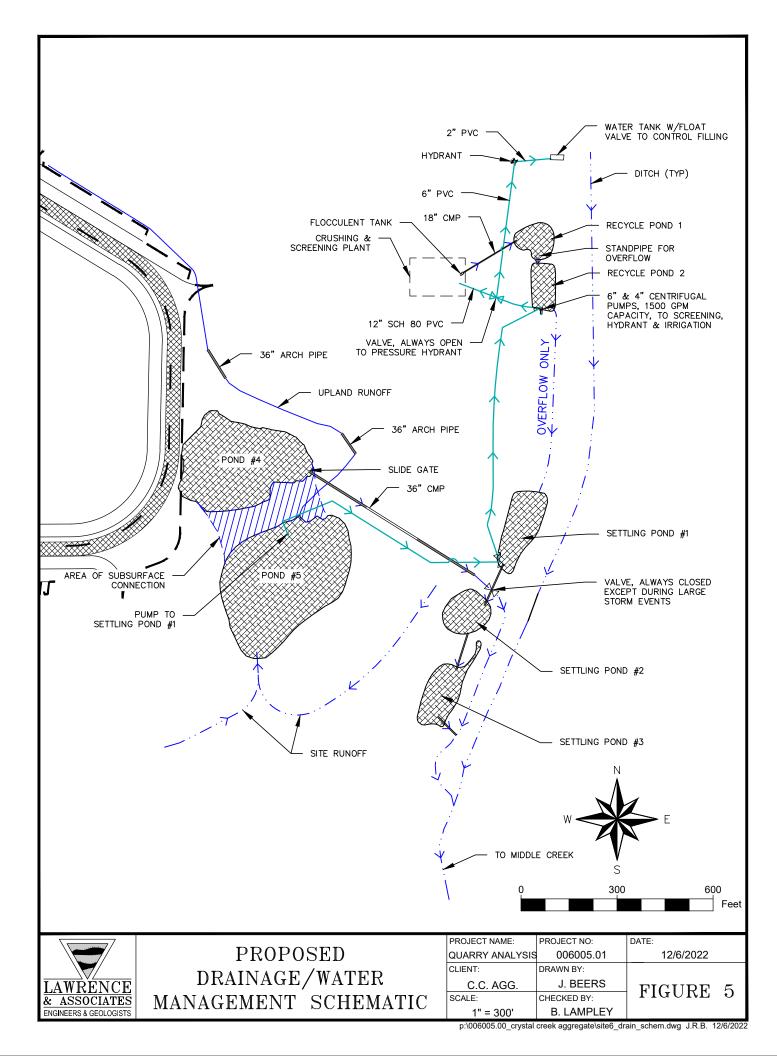


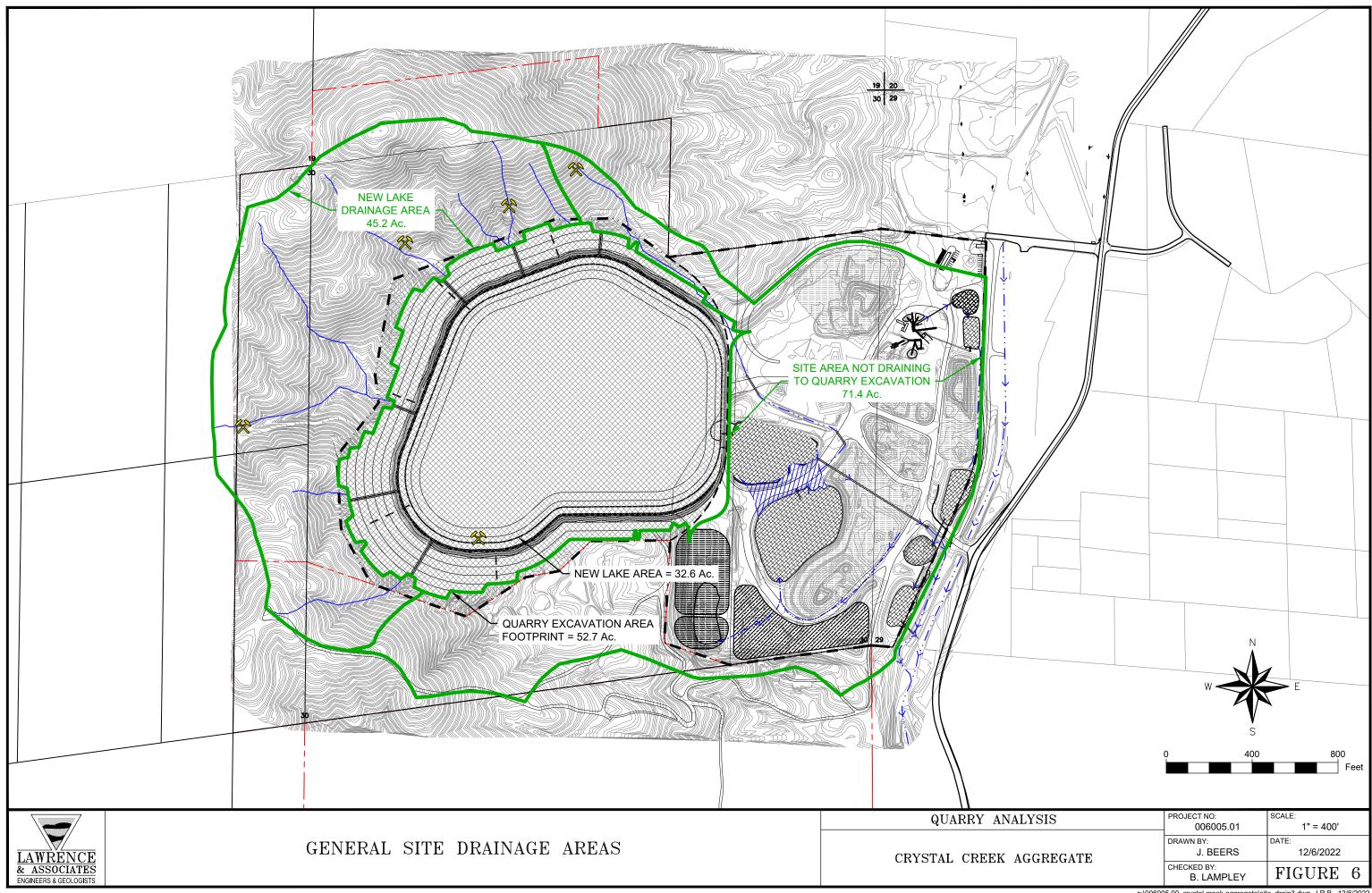
p:\006005.00\_crystal creek aggregate\site5.dwg J.R.B. 12/2/2020



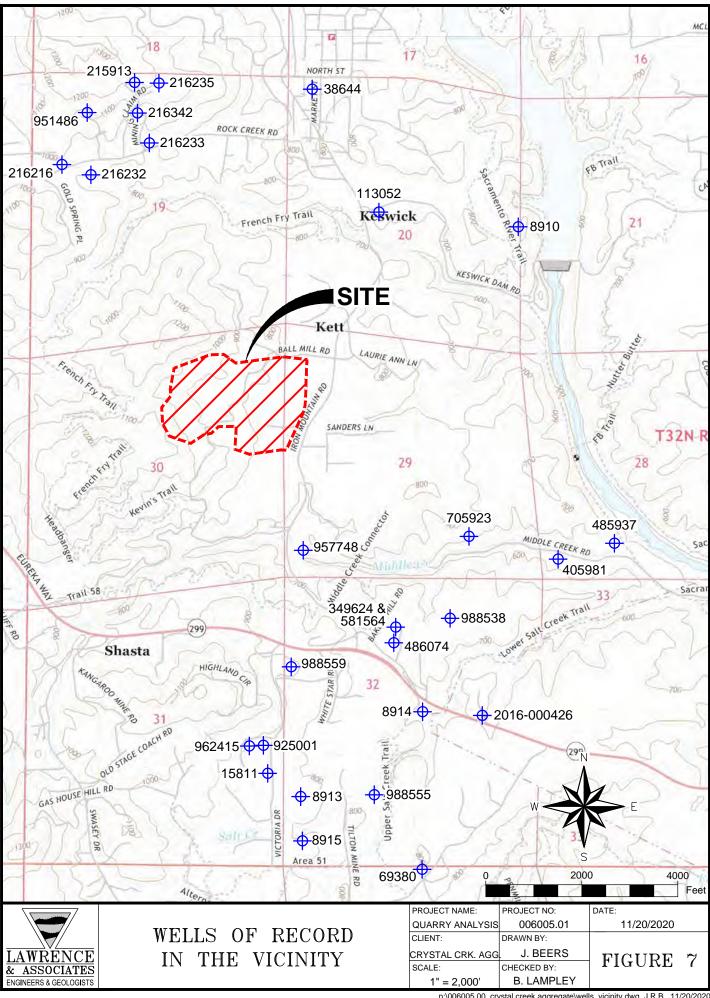
p:\006005.00\_crystal creek aggregate\site\_prop3.dwg J.R.B. 12/6/2022

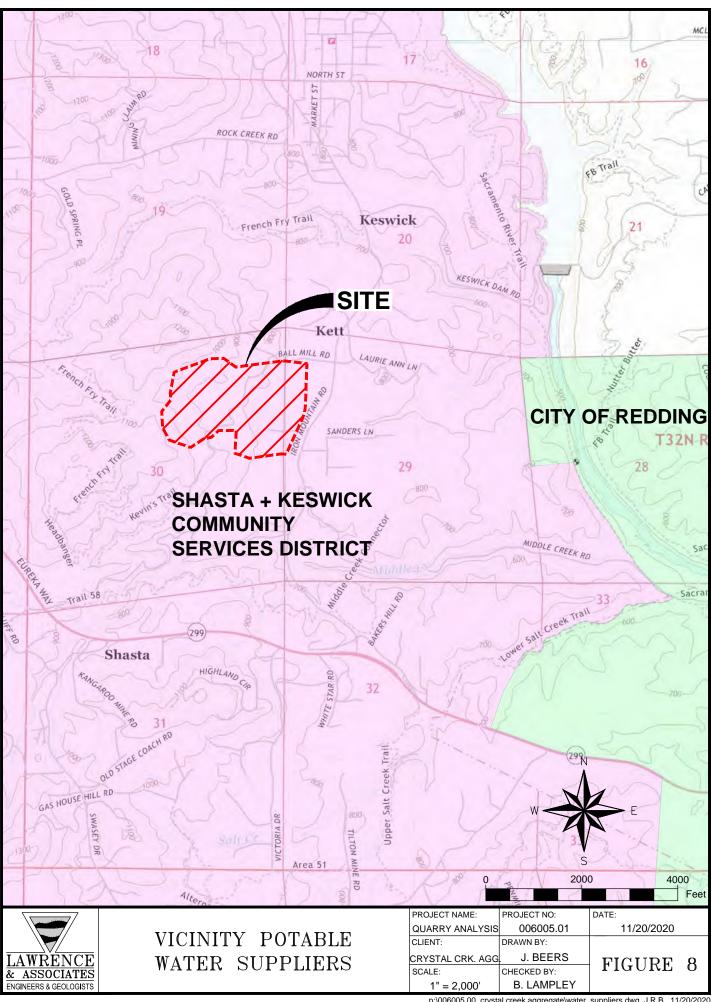






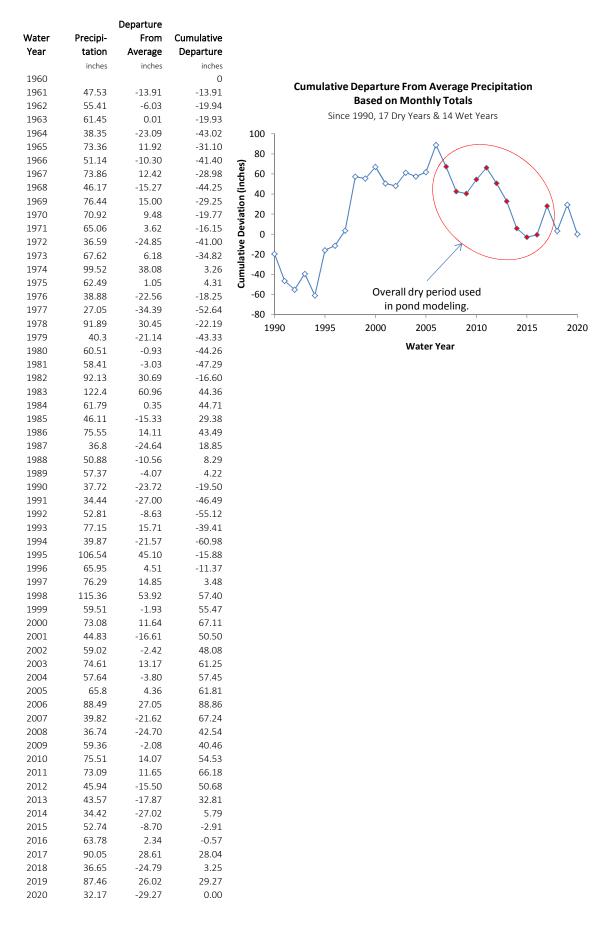
p:\006005.00\_crystal creek aggregate\site\_drain3.dwg J.R.B. 12/6/2022

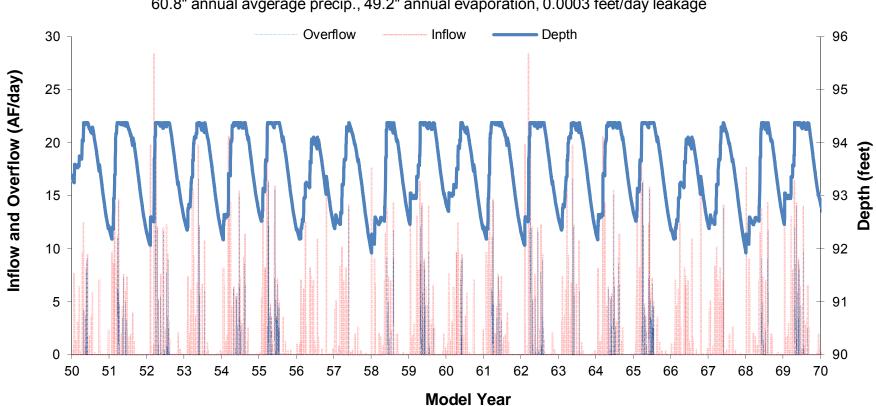




p:\006005.00\_crystal creek aggregate\water\_suppliers.dwg J.R.B. 11/20/2020

### CUMULATIVE DEPARTURE GRAPH & DATA





### Crystal Creek Aggregate - New Lake - Entire Lake Average Rainfall Period (Based on 2007 - 2018 Precipitation)

60.8" annual avgerage precip., 49.2" annual evaporation, 0.0003 feet/day leakage

FIGURE 10



44.17" annual average dry period precipitation, 49.2" annual evaporation, 0.0003 feet/day leakage

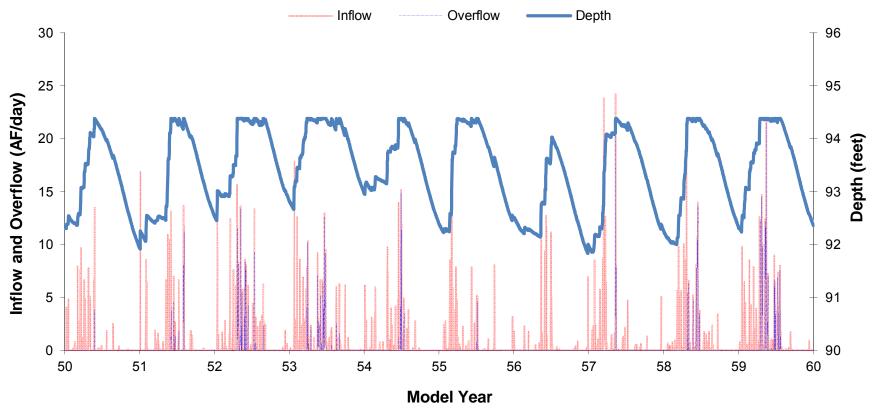
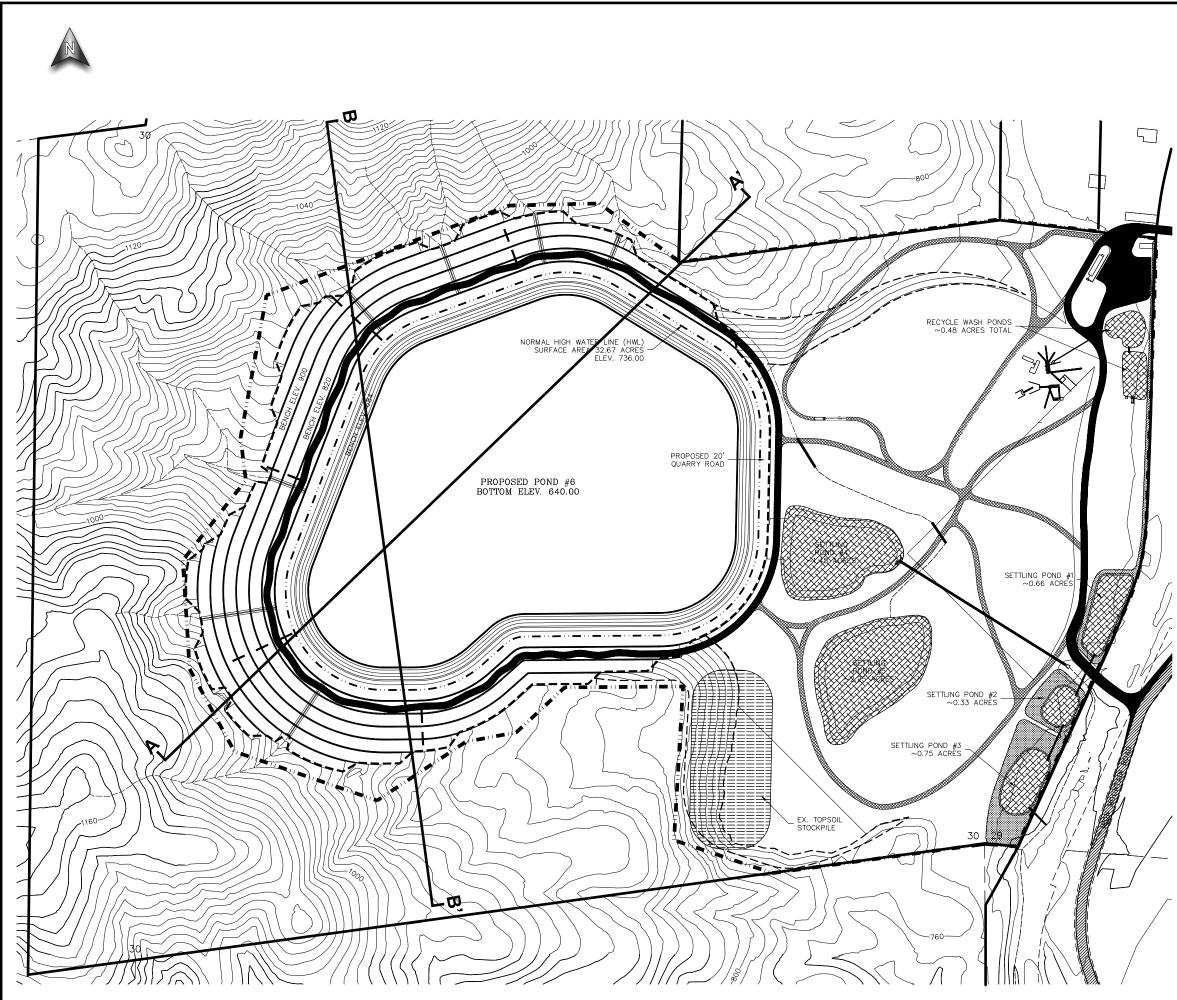


FIGURE 11

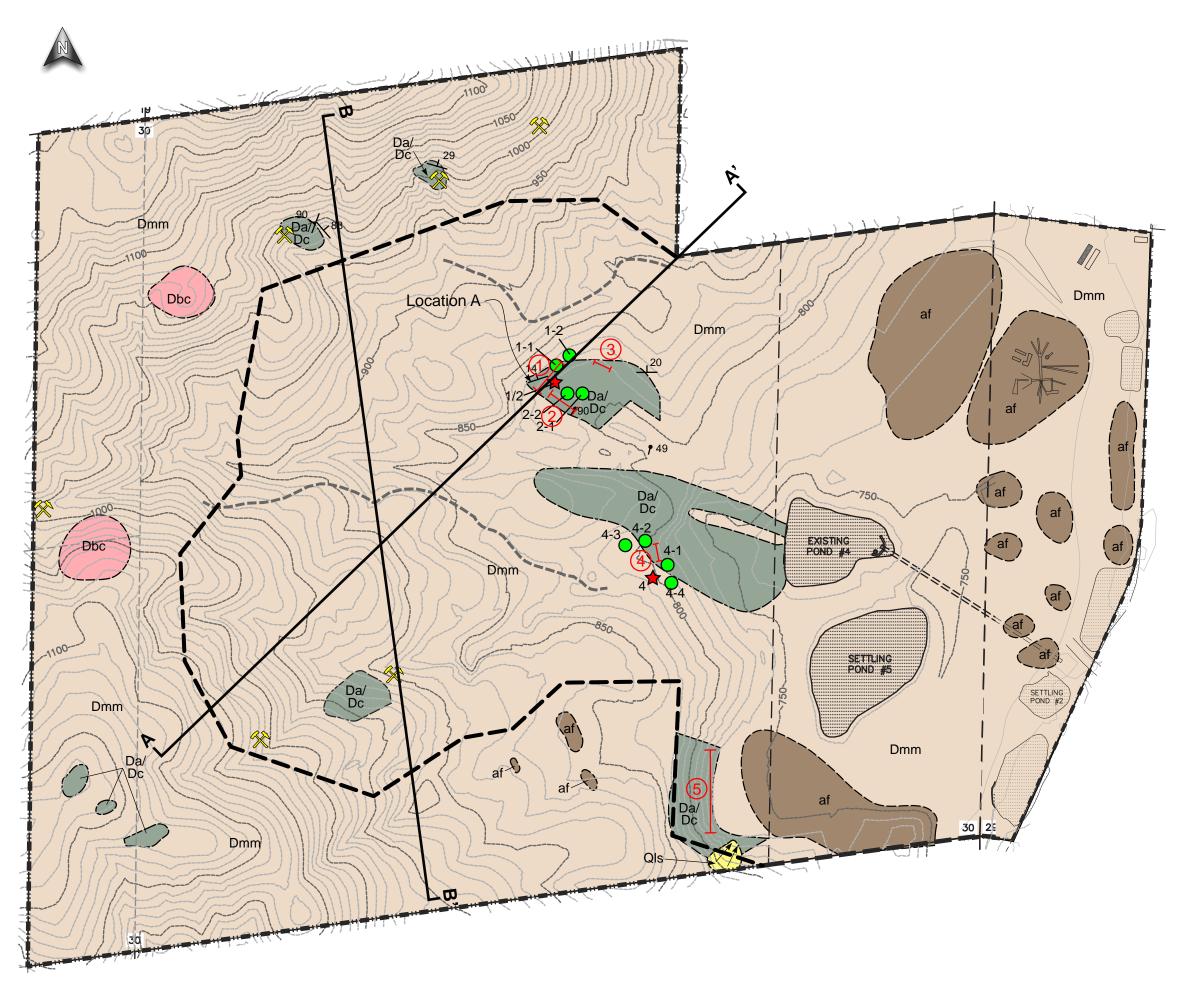
## **APPENDIX A**

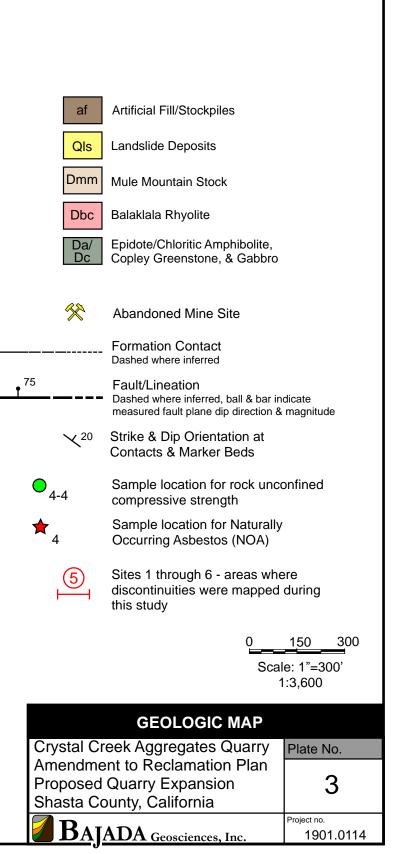
**GEOLOGIC & LINEATION MAPS** FROM: BAJADA GEOSCIENCES, GEOTECHNICAL REPORT



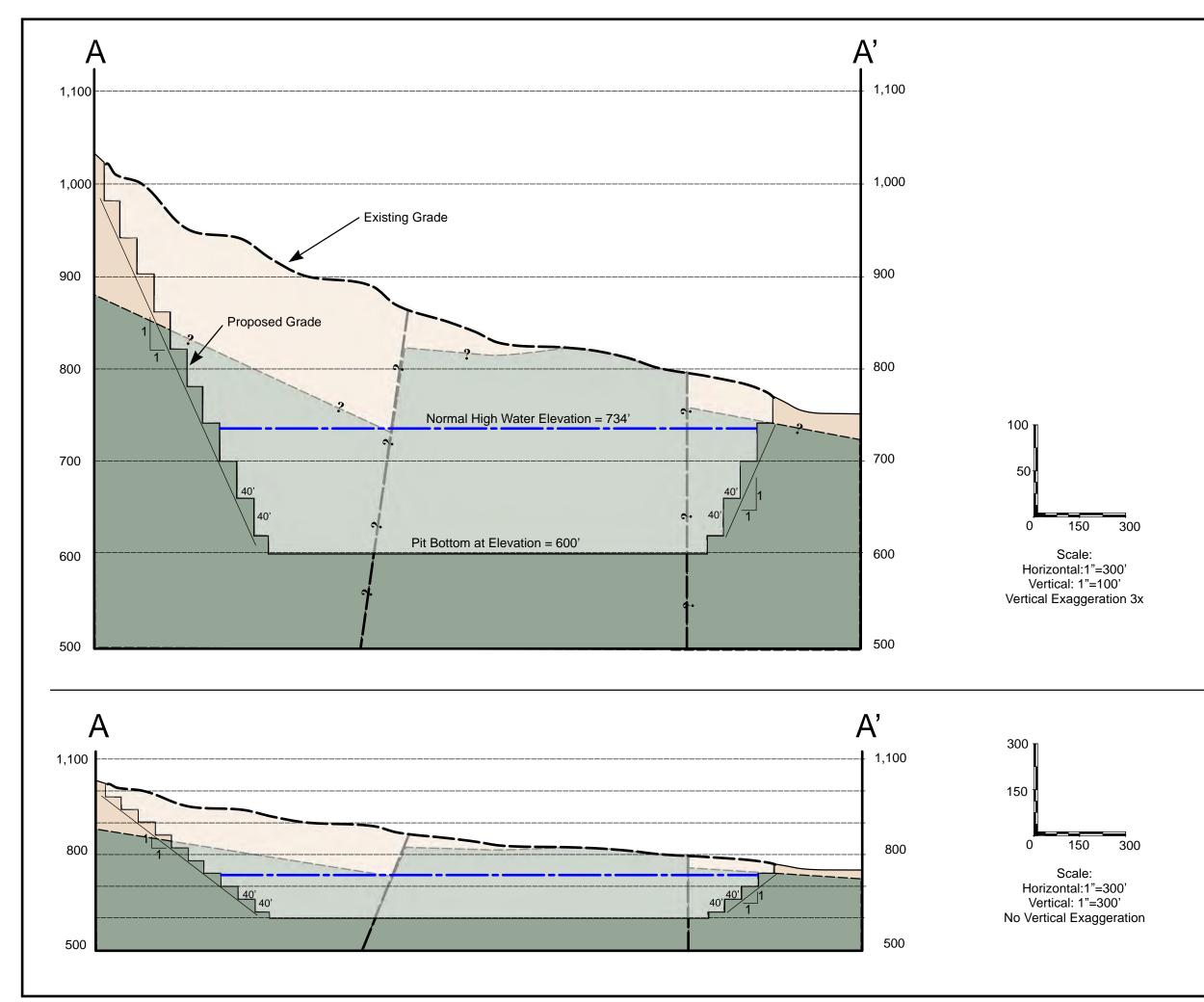
0 Sca	<u>1503</u> 00 ale: 1"=300' 1:3,600			
PROPOSED MINE CONFIGURATION				
Crystal Creek Aggregates Quarry Plate No.				
Amendment to Reclamation Plan Proposed Quarry Expansion Shasta County, California	2			
BAJADA Geosciences, Inc.	Project no. 1901.0114			

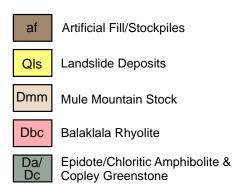
**B'** Cross Sections **B'** see Plates 5.1 & 5.2 В





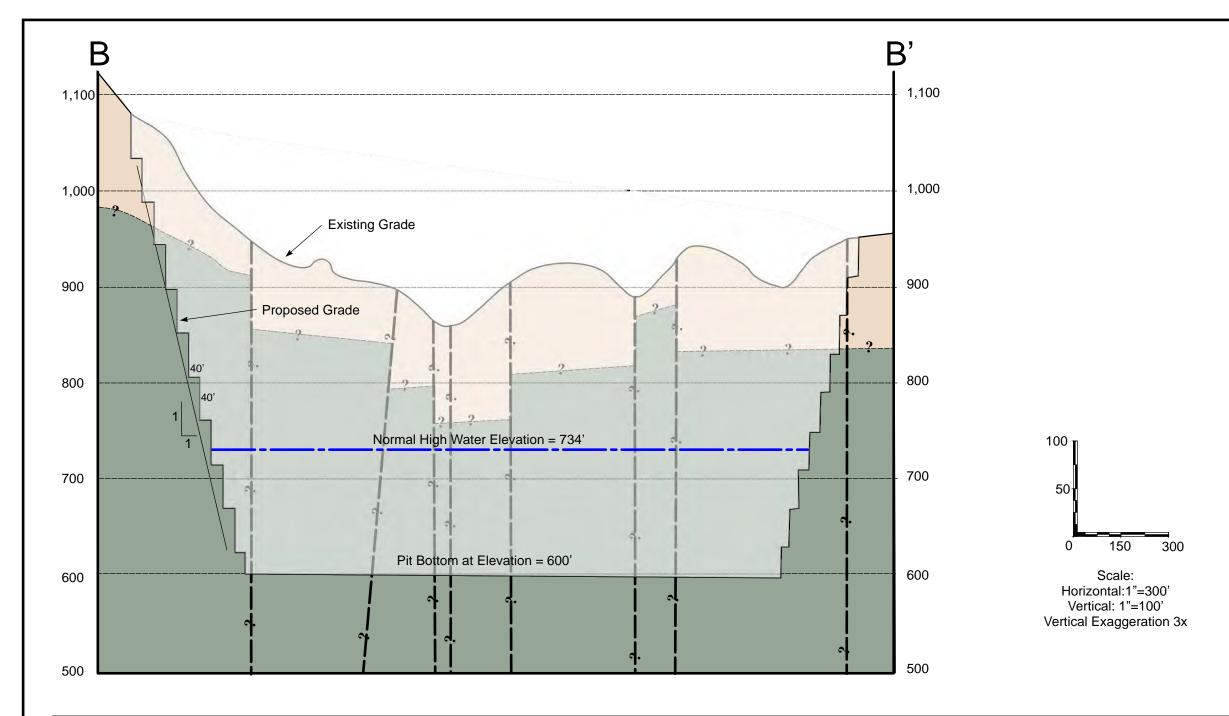
1901.0114

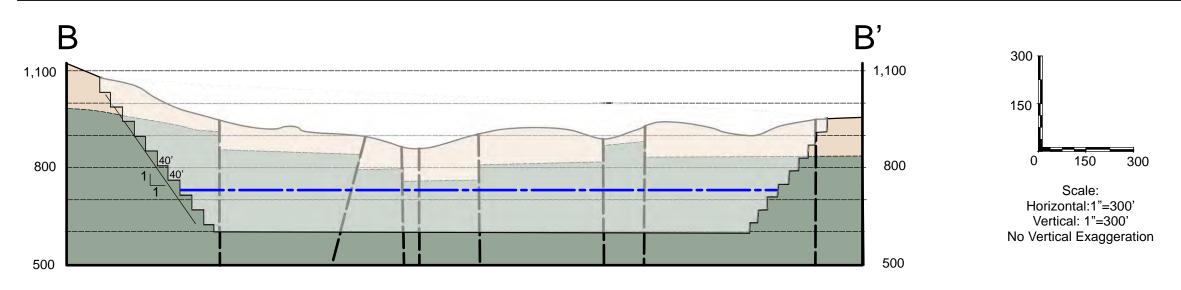


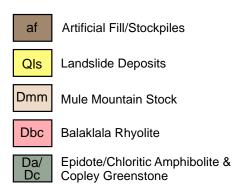


No subsurface information was available for this quarry. Projections of subsurface geological conditions are conjecture and subject to change as the quarry is mined and further mapping performed.

## GEOTECHNICAL SECTION A-A'Crystal Creek Aggregate Quarry<br/>Amendment to Reclamation Plan<br/>Proposed Quarry Expansion<br/>Shasta County, CaliforniaPlate No.Data Bajada Geosciences, Inc.5.1







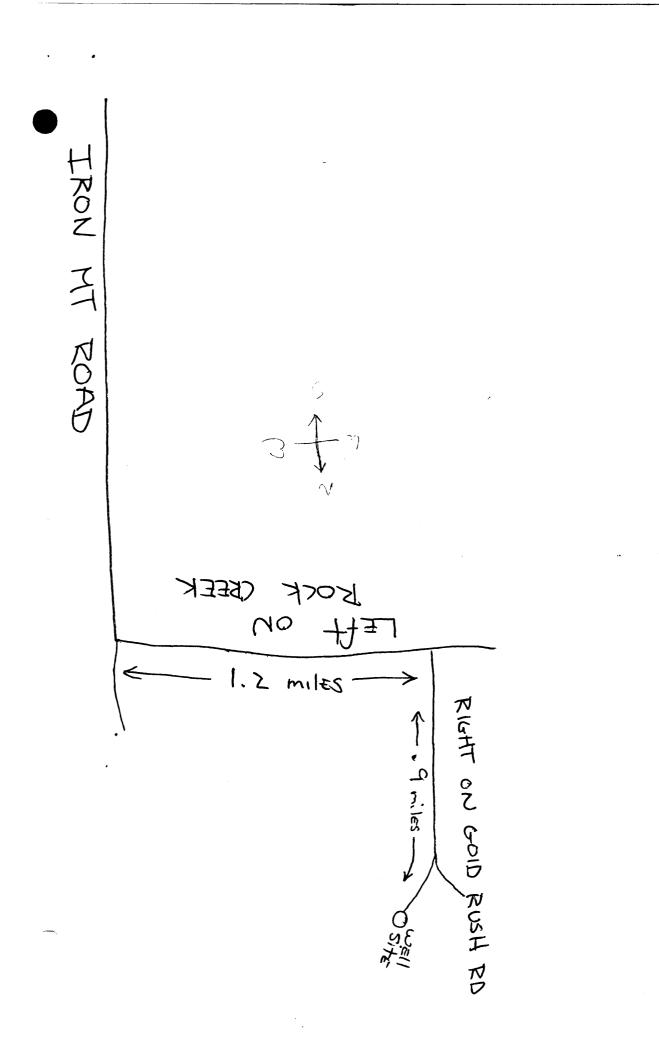
No subsurface information was available for this quarry. Projections of subsurface geological conditions are conjecture and subject to change as the quarry is mined and further mapping performed.

# GEOTECHNICAL SECTION B-B'Crystal Creek Aggregate Quarry<br/>Amendment to Reclamation Plan<br/>Proposed Quarry Expansion<br/>Shasta County, CaliforniaPlate No.Data County, California5.2Data Bajada Geosciences, Inc.Project no.<br/>1901.0114

APPENDIX B VICINITY WELL LOGS

		324	1/05W-19 N
ORIGINAL     STATE OF C/       File with DWR     DEPARTMENT OF W			Do not fill in
			No. 215953
			NO. 210505
Not 'Intent No Loca: ermit No. or Date 8306	WAIER WELL D	RILLERS REPORT	State Well No
Loca, ermit No. or Date 0500	`		Other Well No
Off Rock Creek Road		from ft. to ft. Formation (D	depth_160_ft. Depth of completed well_159_ft. lescribe by color, character, size or material)
(2) LOCATION OF WELL (See inst	ructions):	80 <sup>-87</sup> Blue	
CountyShstaOwne Well address if different from above Gold Rus		<u>87 -100 Blue</u> 100 -123 Fract	ured blue shale
Township32 NRange			gray shale
Distance from cities, roads, railroads, fences, etc			change brown
		140-150 Blue	gray shale
Parcel# 065-220-4	49	150-160 (Hard	Vue gray shale
		- //	
	(3) TYPE OF WORK:		
See Map Attached	New Well 🖾 Deepening 🗌	/	- <u>/</u>
See Map Attached	Reconstruction		X
	Reconditioning		<u>S</u> Y
	Destruction (Describe	<u>- ///-</u> ///	9
	destruction materials and procedures in Item 12		
	(4) PROPOSED USE!		
· ·	Domestic	<u>- / / / / / / / / / / / / / / / / / / /</u>	
	Irrigation	A B	$\langle \rangle \rangle$
	Industrial		113
	Test Well		
	Stock	$\delta \bigcirc - \langle \langle \rangle \rangle$	
	/ Municipal 🛛 🗆		
WELL LOCATION SKETCH	Pthe Monitoing S	- 5	
	VED MACK:		
	No $\boxtimes$ Size		
Cable Air Diamater	of bore	- <i>Q\</i> >	
Other D Bucket Packed The		<del>6,))</del>	
	orations and or size of screen	$\Theta = \frac{1}{2}$	
	A KIN A KYA		
ft. ft. Wall ft.	To ft. Slot	-	
St 0 25 6 5 8 .188 1	39 159	-	
PVC 0 150 4 40		_	
	Allel V		
(9) WELL SEAL:	12		APR 0 / 1988
Was surface sanitary seal provided? Yes 🖾 No	$\Box$ If yes, to depth <u>20</u> ft.	-	
Were strata sealed against pollution? Yes Method of sealing Bentonite	No [] Intervalft.	-	
		Work started <u>2-8-19</u>	
(10) WATER LEVELS: Depth of first water, if known <u>49</u> 85	ft.	WELL DRILLER'S STATEN This well was drilled under my ju	
Standing level after well completion	ft.	knowledge and belief.	
(11) WELL TESTS:	1 dr:122-	Signed	(Well Driller)
Was well test made? Yes XK No If yes Type of test Pump I Bailer	, by whom? <u>dril@de</u> □ Air lift <u>f</u> TX	NAME Diamond	Core Drilling, Inc.
Depth to water at start of test <u>40</u> ft.	At end of test <u>40</u> ft	(Person, firm, o.	r corporation) (Typed or printed)
Discharge 30 gal/min after 12 hours	Water temperature	Palo Cer	etunia Lane Iro, CA 96073 <sub>in</sub>
Che analysis made? Yes □ No KIX If yes		512406	2-18-88
Was electric log made? Yes D No 27 V If yes	attach conv to this report	License No.	Date of this report 2 10 00

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM



32N/05W-19M

- 10a	state of c THE RESOUR DEPARTMENT OF W WATER WELL DI	CES AGENCY ATER RESOURCES	Do not fill in No. 216216 State Well No.
Local Permit No. or Date			Other Well No
Off Rock Creek Road		from ft. to ft. Formation	tal depth <u>130</u> ft. Depth of completed well <u>130</u> ft. (Describe by color, character, size or material) Urden-Red clay
(2) LOCATION OF WELL (See instruc CountyShasta Owner's	tions):	<u>30-42 Weath</u>	ered Shale
CountyOwner's Well address if different from above	Well Number		green shale
	Section 19		ured shake?
rownshipnange	Section		used shale quarts and weathered
Distance from cities, roads, railpads, fences, etc.	-22-68	- shale	and weathered
CONTRACTO LOVINA CO	- x x - 5 (		ured shale with small
	·	- anant	s seams
	(3) TYPE OF WORK:	120 -130 shake	
	New Well 🕅 Deepening	· · · · · · · · · · · · · · · · · · ·	
	Reconstruction	/	2
		- <del>~-`-`-`}</del>	
	Reconditioning	<u> </u>	Č, V
0		<del>/// - ////</del> -	
	Destruction (Describe destruction materials and procedures in Item 12/	$-\beta_{\sim}$ $-\beta$	
	(4) <b>PROPOSED USE</b>		
		- <del>(6/ )}</del>	
	Domestic X		
I I I I II I	Irrigation		- <del>~~</del>
Kock Crook Rd H	Industrial		
	Test Well		<u></u>
Karb Comb Od	Stock	<u> </u>	→
TOM OWER RO	Municipal	K <u>-</u> aXX	
WELL LOCATION SKETCH	Dether 🕤 🗆	<u> </u>	
(5) EQUIPMENT: (6) GRAVER	RACK:		
Rotary 🛛 Reverse 🗆 Yes 🗆 No	Size		
Cable _ Air X Diameter of b	ore		
Other D Bucket Packed from_	toft	<u> []]] ^ -</u>	
(7) CASING INSTALLED: (8) PERFOR	ATIONS:	1997	
Steel I Plastic Concrete Type of perfo	ation or size of screen	N97 -	
From To Dia. Gage or From	VTo SIDE	_	······
ft. ft. ( In. Wall ft.	ft. Kize		·
0 120 6 5 8 188 100	120	-	
		-	
	1 599641 1	-	FEB 5 1986
(9) WELL SEAL:			FEB 5 1900
Was surface sanitary seal provided? Yes 🔯 No 🗆	If yes, to depth_0-201_ft.	-	
	D 🔲 Intervalft.		66 86
Method of sealing GROUT		Work started1/Z	$19 \underline{86} Completed \underline{1/3} \underline{19} \underline{80}$
(10) WATER LEVELS: Depth of first water, if known \$4	<i>(</i> ,	WELL DRILLER'S STAT	
Depth of first water, if known <u>84</u> Standing level after well completion <u>20</u>	ft.	This well was drilled under m knowledge and belief.	y insistigation and this report is true to the best of my
(11) WELL TESTS:	1t.	SIGNED	Vo. hus
Was well test made? Yes 🕺 No 🗌 If yes, b	y whom? <u>Driller</u>		(Well Oriller)
Type of test Pump $\Box$ Bailer $\Box$	2.		ore <u>Prolling</u>
Depth to water at start of test $20$ ft. Disclose $32$ gal/min after $\frac{1}{2}$ hours	At end of test <u>20</u> ft	Address 10556 Pet	n, or corporation) (Typed or printed)
	Water temperature	CityPalo Cedr	
Chei. analysis made? Yes □ No 🕅 If yes, b Was electric log made? Yes □ No 🕅 If yes, at	y whom? tach copy to this report	$\begin{array}{c} \text{City} \\ \text{License No.} \\ 404778 \end{array}$	

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

32N/05W-19M Do not fill in

ORIGINAL

Not

File with DWR

Intent No.\_

Local Permit No. or Date\_

#### STATE OF CALIFORNIA THE RESOURCES AGENCY DEPARTMENT OF WATER RESOURCES WATER WELL DRILLERS REPORT

No. 216232

State Well No.\_\_\_\_ Other Well No.\_\_\_\_

		(12) WELL LC	DG: Total depth 180 ft. Depth of completed well 180 ft
			ormation (Describe by color, character, size or material)
		0 - 6	Overburden
(2) LOCATION OF WELL (See instruct		6 - 22	Highly fractured, weathered shale
	Well Number	22 - 40	Highly fractured shale with quart
Well address if different from above Rock Ck. R		$40 - \hat{4}6$	Highly weathered shale with quart
Township <u>32N</u> Range 5W	Section 19	46 - 60	Fractured blue shale
Distance from cities, roads, railroads, fences, etc		60 - 104	Hard dense blue shale
interest class, rouge, ranouds, renews, etc		104 - 122	Hard dense blue shale with quartz
Assessor's parcel no. 06	5-220-23		seams
		122 - 148	the second secon
	(3) TYPE OF WORK:	148 - 154	bard dense blue shale
	New Well Deepening		Fractured blue shale
See map attached	_	154 ~ 180	Hard dense blue shale
see map accached		$\rightarrow$	
			- <u>, G, V</u>
			- All Q
	Destruction [] (Describe destruction materials and procedures in Item 12)		-
	(4) PROPOSED USE	(?	
· ·	Domestic	$\gamma = \sqrt{2}$	<u>)                                    </u>
	Irrigation	<u> </u>	
	Industrial	- ALLON-	
	Test Well		
			(
	Stock	$\rightarrow \rightarrow - \ll$	
	Municipal D	<u> 8                                    </u>	Q
WELL LOCATION SKETCH	19ther		· · · · · · · · · · · · · · · · · · ·
(5) EQUIPMENT: (6) GRAVEN	$\mathcal{N} = \{\mathcal{O}, \mathcal{O}\}$		
	Size		
Cable Air Dianagray of be	ore <u> </u>		
Other D Bucket Packed from_	toft.	( <i>//)</i> ~	
(7) CASING INSTALLED: (8) PERFOR	m Si	<u> </u>	
Steel Plastic Concrete Type of perfor	ntion or size of screen	<u> </u>	
From To Dia. Gage or From	DTo SIDE		
ft. ft. (An. Wall ft.	ft. size	-	·
0 63 6 5 8 188		-	
	<u></u>		
(9) WELL SEAL:		_	JUN 2 1986
Was surface sanitary seal provided?YesX No 🗆	If yes, to depth <u>20</u> ft.	-	
	D Intervalft.	-	•
Method of sealing Bentonitecement	сар	Work started 2-	<u>1986</u> Completed <u>2-15</u> 1986
(10) WATER LEVELS: <u>46</u>	ft.	WELL DRILLER'	S STATEMENT: 01382 under my jurisdiction and this report is true to the best of m
Standing level after well completion10	ft.	knowledge and belief.	and in point is the to the Dest of the
(11) WELL TESTS:		SIGNED C	y Value
Was well test made? Yes X No I If yes, by	whom? Driller		(Well Driller)
Type of test Pump Bailer Depth to water at start of testft.	Air un X		amond Core Drilling rson, firm, or corporation) (Typed or printed)
	At end of testft		556 Petunia Lane
<b></b>	Water temperature		lo Cedro, CA zip 96073
Chei. analysis made? Yes D No 🕱 If yes, by Was electric log made? Yes D No 🕱 If yes, att	y whom? tach copy to this report		4778 Date of this report3/4/86
	were copy to this topoit		

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

32N/05W-19M

ORIGINAL

Not

- -

**File with DWR** 

<sup>c</sup> Intent No.\_

### STATE OF CALIFORNIA THE RESOURCES AGENCY DEPARTMENT OF WATER RESOURCES WATER WELL DRILLERS REPORT

Do not fill in No. 216233

State Well No.\_

Local Aermit No. or Date 77.32		State Well No       Other Well No
(2) LOCATION OF WELL (See instruc	-	(12) WELL LOG: Total depthft. Depth of completed wellft. from ft. to ft. Formation (Describe by color, character, size or material) 0 - 5 overburden 5 - 20 Weathered shale
CountyShasta Owner's	tions): Well Number	20 - 40 fractured shale w/quarts
Well address if different from aboveRock Creel		40 - 52 fractured shale
Township 32N Range 5W	Section 19	52 - 55 highly fractured shale
Distance from cities, roads, railroads, fences, etc		55 - 63 fractured shale
Parcel # 065-220-54		63 - 70 shale and quartz
		70 - 103 shale
		103 - 110 fractured shale
	(3) TYPE OF WORK:	110 - 120 shale
	New Well Deepening	
		180 - 220 shale
No ott of	5	220 - 244 fractured shale
Map attached	Horizontal Well	22-1 - 310 hard dense gray shale & quartz
	Destruction  (Describe destruction materials and) procedures in Item 12	
	(4) PROPOSED USE!	
· · · · · · · · · · · · · · · · · · ·	Domestic	
	Irrigation	$\overline{\langle - \overline{\langle - \overline{\rangle}} \rangle} = \overline{\langle \overline{\rangle} \rangle}$
		<u> </u>
	Stock	
	Municipal 🔿 🗌	
	2ther	
(5) EQUIPMENT: (6) GRAVED		
	X Size	
Cable Air Diamater of bo	ore	
Other Bucket Packed from_	toft,	<u>5 \\) ~-</u>
(7) CASING INSTALLED: (8) PERFOR.		<u> </u>
Steel X Plastic Concrete Type of perfor	ation or size of screen	
From To Dia. Cage or From		_
ft. ft. Wall ft.	ft. size	_
0 33 6 5 8" .188		
		_
		-
(9) WELL SEAL:		
Was surface sanitary seal provided? Yes X No	If yes, to depth <u>20</u> ft.	- <b>UN</b> 2 1986
Were strata sealed against pollution? Yes No Method of sealingYOUL	Intervalft.	-
(10) WATER LEVELS:		Work started_02-17-86_19         Completed_02-21_19_86_           WELL DRILLER'S STATEMENT:         01382
Depth of first water, if known 46	ft.	This well was filled under my invadiction and this report is true to the best of my knowledge and belief.
Standing level after well completion 10	ft.	
(11) WELL TESTS:	whom? driller	SIGNED WWW GULDE
Was well test made?     Yes     No     If yes, by       Type of test     Pump     Bailer	Air lift $\mathbf{X}$	NAME Diamond core Drilling
Depth to water at start of testft.	At end of testft	NAME Dlamond Core Drilling 10556 <sup>(Ppen, fini, or comporation)</sup> (Typed or printed)
Discharge 5 gal/min after 1 hours	Water temperature	Address
Che analysis made? Yes □ No 🕅 If yes, by	-	City_Palo Cedro Ca zip_96073
XX7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ach copy to this report	License No

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

32N/05W - 19M Do not fill in

OR	IGI	N/	AL
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Not

**File with DWR** 

Intent No.\_

Local Permit No. or Date\_\_\_\_

7735

### THE RESOURCES AGENCY DEPARTMENT OF WATER RESOURCES WATER WELL DRILLERS REPORT

STATE OF CALIFORNIA

No. 216235

State Well No.\_\_ Other Well No.\_\_\_\_

Off Rock Creek Road		(12) WELL LOG: Total depth 140 ft. Depth of completed wellft
On ROCK CICCK ROad		from ft. to ft. Formation (Describe by color, character, size or material)
		0 - 35 Overburden
(2) LOCATION OF WELL (See instruct	tions):	35 - 46 Highly weathered shale
CountyOwner's V	Well Number 4	46 - 125 Shale
Well address if different from above Mining Cla	aim Rd	125 - 132 Fractured Shale
Township 32N Range 5W	Section19	132 _ 140 Shale
Distance from cities, roads, railroads, fences, etc		
Parcel #065-220-68		- 102
	()) TYPE OF WORK	+ <u>&gt;</u>
	(3) TYPE OF WORK:	
soo man attached	New Well 🕅 Deepening 🗌	
see map attached	Reconstruction	
	Reconditioning	
	Horizontal Well	
	Destruction 🗌 (Describe	1115 1111 0
	destruction materials and procedures in Item 12	
	(4) PROPOSED USE?	
	Irrigation	
	Industrial	
	Test Well	
	Stock 📿	$( \mathbb{N} ) - \mathbb{N} $
	Municipal 🛛	
WELL LOCATION SKETCH	Other	
(5) EQUIPMENT: (6) GRAVED		$- n_{-} \otimes$
	$\sim$ $($ $($ $($ $))$	
Cable Air Diameter of bo	ore	- <u>())</u>
Other D Bucket Packed from_	toft.	$((1, 1))^{-}$
(7) CASING INSTALLED: (8) PERFOR.		<u> </u>
Steel 🕅 Plastic 🗆 Concrete 🖄 Type of perfor	action or size of screen	
From To Dia. Gage or From	NTo Slot	
ft. ft. Wall ft.	ft. size	-
0 51 6 5/8" .188 & .250	wall	
	mart NV	
	CUL X	
(9) WELL SEAL:	V	
	If yes, to depthft.	
cree t	□ Intervalft.	
Method of sealing Grout		Work started 04-03 19 36 Completed 04-04 19 81
(10) WATER LEVELS: Depth of first water, if known 125	<u>.</u>	WELL DRILLER'S STATEMENT: 01382
	ft.	This well was drilled under my jurisdiction and this report is true to the best of m
	ft.	
(11) WELL TESTS: Was well test made? Yes $X$ No $\square$ If yes, by	whom? and land	SIGNED Wen Duffler
Was well test made?Yes XNoIf yes, byType of testPumpBailer	Air lift	NAME Diamond for Drilling
Depth to water at start of test_70_ft.	At end of test <u>56</u> ft	(Person, firm, or corporation) (Typed or printed)
Discharge 20 gal/min after 1 hours	Water temperature	Address 10556 Petunia Lane
Che analysis made? Yes $\Box$ No $\Box X$ If yes, by	-	CityPalo Cedro CaZip96073
	tach copy to this report	License No. 404778 Date of this report 04-14-86

IF ADDITIONAL SPACE IS NEEDED. USE NEXT CONSECUTIVELY NUMBERED FORM

32N/05W-19M

		Do	not	fill	in
-	-			-	

zip 96073

Date of this report 1 - 25 - 89

	Do not	jui
No.	216342	2

ORIGINAL		CALIFORNIA	Do not fill in
File with DWR	DEPARTMENT OF V	RCES AGENCY	No. 216342
Notice of Intent No	WAIER WELL D	RILLERS REPORT	State Well No
Loc: mit No. or Date 8611			Other Well No
Off Rock Creek Road		from ft. to ft. Formation (Desc	th 160 ft. Depth of completed well 160 ft. ribe by color, character, size or material) red Shalle
(2) LOCATION OF WELL (See CountyShasta	instructions): Owner's Well Number1		ray Shale
Well address if different from above Mining	g Claim Road Shasta	County	
Township <u>32 N</u> Range 5 K	WSection19	-	
Distance from cities, roads, railroads, fences, etc.	•		
Tarcel # 365-7	3		<u> </u>
		<u> </u>	·
	(3) TYPE OF WORK:		
	New Well 🔯 Deepening 🗌		
	Reconstruction		X
		At-	<u>`</u>
	Horizontal Well	<u> 1997 - 1998</u>	
	destruction materials and procedures in Item 12/		
See Map Attached	(4) PROPOSED USE:	- (?	
	Domestic	$\nabla - \nabla \nabla$	<u> </u>
	Irrigation	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	$\mathcal{K}_{\mathcal{K}}$
	Industrial	<u> </u>	$\sim$
	Test Well	a VIIa	·····
	Stock	<u> </u>	
	Municipal		
WELL LOCATION SKETCH	Dyper O	$  - \underbrace{ \otimes} \bigvee $	
(5) EQUIPMENT: (6)	GRAVEA RACK:		
Rotary 🛛 Reverse 🗆	No B Size		
Cable 🗆 Air 🔀 Digne	greer of bore	$-\overline{a}$	
Other 🗌 🛛 Bucket 🗆 Park	tsomtoft	<u>- (()) × -</u>	
(7) CASING INSTALLED: (8)	PERFORATIONS	X ~	
Steel 🛐 Plastic 🗌 Concrete 🛛 Type	of perfortion or size of screen	S -	
From To Dia. Gagoor F	To Slot	-	·····
	ft. ft. fize		•
teel 0 47 5 5 8 188		_	· · · · · · · · · · · · · · · · · · ·
¥			
		-	
(9) WELL SEAL:			····
Was surface sanitary seal provided? Yes 🔀	No $\Box$ If yes, to depth <u>20'</u> ft.	-	MAR 8 1989
Were strata sealed against pollution? Yes ( Method of sealing Bentonite	□ No □ Intervalft.	-	0 1 1 1 - 4
(10) WATER LEVELS.		Work started 1-3 1989	
Depth of first water, if known 120'	ft.	WELL DRILLER'S STATEME	NT: <b>/382</b> liction and this report is true to the best of ma
Standing level after well completion	ft.	knowledge and ellef.	and the report is true to the best of the
(11) WELL TESTS:		SIGNED T, Jg.	Well Driller)
Was well test made? Yes 🕱 No 🗌 I Type of test Pump 🗌 I	lf yes, by whom? <u>Driller</u> Bailer □ Air lift ⊠	NAME Diamond Core	
Depth to water at start of test_40ft.	At end of test 40 ft	(Person, firm, or co	rporation) (Typed or printed)
Discharge 9 gal/min after 1 ho	ours Water temperature	Address 10556 Petunia	LN

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED. USE NEXT CONSECUTIVELY NUMBERED FORM

No 🕅 If yes, by whom?\_

No 🖾 If yes, attach copy to this report

Ch

W۵

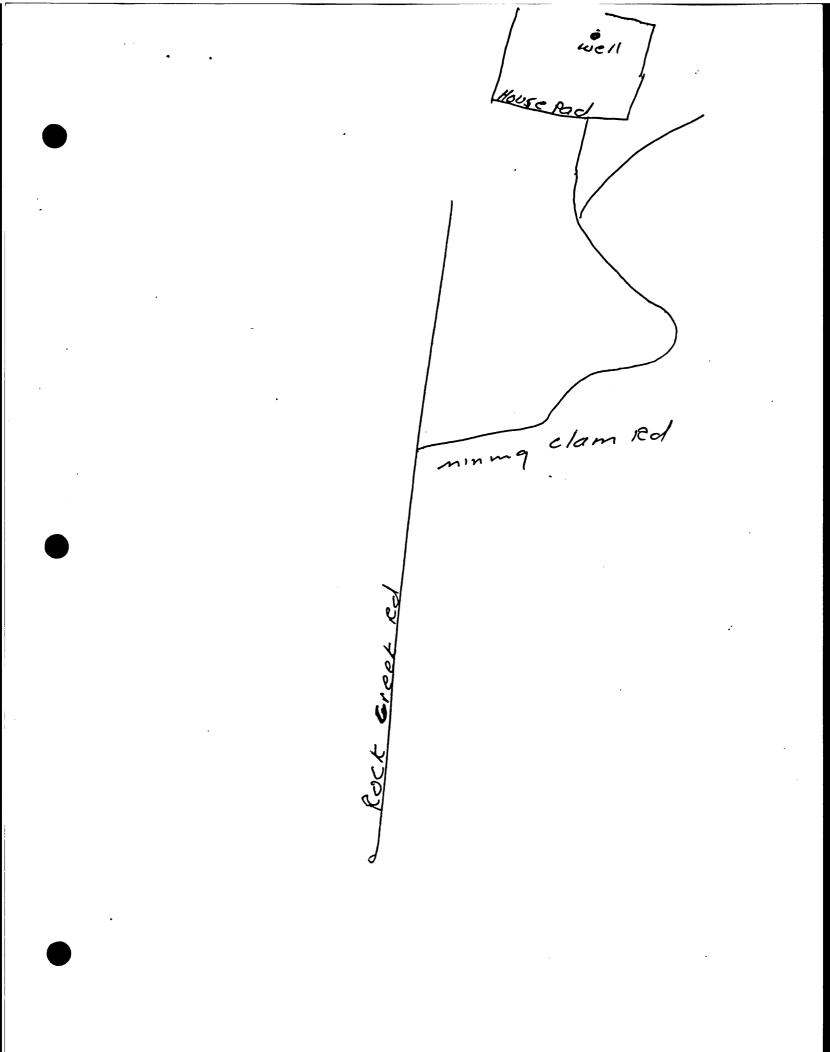
ul analysis made? Yes 🗌

Yes 🗌

.ectric log made?

City PALO Cedro Ca

License No. 512406



Page	ORIGINAL File with DWR	RECEIVED STATE OF CALL	FORNIA	ONLY - DO NOT FILL IN -
Date Week Begna (24/2/12) Particle 14/2/12	Page _1_ of _1	Refer to Instruction	Pamphlet /STAT	re well no./station no.
Doel Poweik Agener Difference         Development agener Difference         De	Owner's Well No.			
Permit No. MTR 12:000000000000000000000000000000000000				
Permit No. N. 11.122-120770000000000000000000000000000000				
ORDERTTON (2)         X. series:	Permit No. <u>W</u>			
Description         Description         Description         Description           9         33         Fan         Status         The second status </td <td></td> <td></td> <td></td> <td></td>				
Barries         Dissource motival, grant ass, color, etc.         Description         Description           0         9         Tan. very. weathered. bedrock         Cry. Keswick         Cry. Ke	ORIENTATION (⊻)	DRILLING Air-Dotary	Off Rock Creek Road	
n         w         Describe andprinting grain size, color, rec.         PP           9         133         1an very weathered bedrock         Address Gold Rush VLL LOCATION         Proved         Provide         Pro	DEPTH FROM			
9         33         Tan very weathered bedrock classes (classes)         Covy Keswick           67         74         Light brownwachered bedrock classes         Covy Keswick         Data (classes)           74         Light brownwachered bedrock classes         Covership (classes)         Sector (classes)         Covership (classes)         C				
9         33         Tan very weathered bedrock classes (classes)         Covy Keswick           67         74         Light brownwachered bedrock classes         Covy Keswick         Data (classes)           74         Light brownwachered bedrock classes         Covership (classes)         Sector (classes)         Covership (classes)         C		Tan Silt AND	Address Gold Rush Dr.	
67       74       115 http://intelight.grey.bedrock       Township 22 PF. Runge 2/20 prevel _001         74       118       Light.grey.Budrock       Township 22 PF. Runge 2/20 prevel _001         118       122 Light.grey.Rhyolite       Lat			City Keswick	
Image: Second Picture           Z4         Light Grey before K           Its         Light Grey before K           Its         Construction         North         Second         North           Its         Carlot Second         North				
174       118       Light grey bedrock -       Lat       Intermediate       Locarton skerch       Data       Intermediate	<u>67 ¦74 ¦</u>		r eAPN Book 065 Page 220 Page	
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	74 110			
1116     122     146     Light grey Rhyolite     Anew Mail       123     Anew Mail     Anew Mail     Anew Mail       124     Anew Mail     Anew Mail     Anew Mail       125     Anew Mail     Anew Mail     Anew Mail       126     Anew Mail     Anew Mail     Anew Mail       125     126     Anew Mail     Anew Mail       126     126     Anew Mai			Lat <u>Lat</u> Lo	DEG. MIN. SEC.
122       146       Light grey Rhyolite         122       146       Research         123       146       Research         124       Research       Research         125       27       126         126       Research       Research         127       126	118 122			
122       146       Light grey Rhyolite				
	122 146			
Image: Second				Other (Specify)
Image: Second				DESTROY (Describe
WATER SUPPLY       WATER SUPPLY         WATER SUPPLY       Non-set			_	Procedures and Materials
Image: Set attached map       Image: Set attached map       Image: Set attached map       Image: Set attached map         Image: Set attached map       Image:		<u> </u>		
Image:	I <sup>1</sup> 1.	and the second s	-	
Image: Source in the second				Irrigation Industrial
CATHOOL PROTEINS       CATHOOL PROTEINS         MATERIAL       SOUTH       MATERIAL         Blastent or Describe Diamong ynait, bee difficue ynait, bee diffuent weren yn PLASE BE ACCURATE       SOUTH         Blastent or Describe Diamong ynait, bee diffuent weren yn PLASE BE ACCURATE       SOUTH         Blastent or Describe Diamong ynait, bee diffuent weren yn PLASE BE ACCURATE       South         Blastent or Describe Diamong ynait, bee diffuent weren yn PLASE BE ACCURATE       South         Blastent or Describe Diamong ynait, bee diffuent weren yn PLASE BE ACCURATE       South         Blastent or Describe Diamong ynait, bee diffuent weren yn PLASE BE ACCURATE       South yn PLASE BE ACCURATE         Blastent or Describe Diamong yn PLASE BE ACCURATE       South yn PLASE BE ACCURATE         Blastent or Describe Diamong yn PLASE BE ACCURATE       South yn PLASE BE ACCURATE         WATER LEVEL 4 YIELD OF COMPLETED WELL       146_(Feet)         TOTAL DEPTH OF BONING 146_(Feet)       TYPE         TOTAL DEPTH OF BONING 146_(Feet)       TYPE         TOTAL DEPTH OF BONING 146_(Feet)       MATERIAL         FROM SUFFACE       BORE         PORE       TYPE         PAGE Structure       CASINC (S)         FROM SUFFACE       BORE         PAGE Structure       MATERIAL         TYPE       Structure         <			TE SEE ATTACHED MAP	- 1
Hear ECONNOC       Hear ECONNOC       DIRECT PUSH         Image: Im		······································	-	
Image: Solution of the second seco				
VAPOR EXTRACTON       SOUTH         SOUTH       South         Image: South in the second attack in and itsel in	1 1	÷		
Image: Second States of Decrific Distance of Well From Fonds, Buildings, Process, Neural States of and States of and States of and States of Stat				
Hubardie or Describe Distance of Well from Road, Building, Building, Breach and Discontinue of an Disconte of and Distance of Well from Road, Building, Description, PLASE BE ACCURATE & COMPLETE.     OTHER SPECIFY       Image: State of the state				
Precessing:     Prec			Illustrate or Describe Distance of Well from Roads, 1	Buildings,
WATER LEVEL & YIELD OF COMPLETED WELL         WATER LEVEL & YIELD OF COMPLETED WELL         DEPTH TO FIRST WATER 6.0 (F) BELOW SURFACE         DEPTH OF BORING14.6 (Feet)         TOTAL DEPTH OF BORING14.6 (Feet)         TOTAL DEPTH OF COMPLETED WELL14.6 (Feet)         MATER LEVEL & YILL DARMODOWN (FI.)         TYPE (Colspan="2">ANULAR MATERIAL / INTERNAL (MATERIAL / INTERNAL (MATERIAL / INTERNAL / INT	I I 		Fences, Rivers, etc. and altach a map. Use additional necessary. PLEASE BE ACCURATE & COMPLET	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			WATER LEVEL & YIELD OF	COMPLETED WELL
STIMATE VIED: 2.4 (GPM) & TEST TYPE ATT THE         CASING (S)         TOTAL DEPTH OF COMPLETED WELL 146 (Feet)         CASING (S)         DEPTH FROM SURFACE       DORE HOLE DEPTH FROM SURFACE       CASING (S)         DEPTH FROM SURFACE       DORE HOLE (Inches)       CASING (S)         DEPTH FROM SURFACE       DEPTH HOLE (Inches)       CASING (S)         DEPTH FROM SURFACE       DEPTH (Inches)       DEPTH (Inches)       ANNULAR MATERIAL TYPE         VEX X X X X X X X X X X X X X X X X X X			DEPTH TO FIRST WATER <u>60 '</u> (Ft.) BELOV	W SURFACE
STIMATE VIEL 0: 2.4     (GPM) & TEST TYPE ATT THE       TOTAL DEPTH OF BORING 14.6 (Feet)       TOTAL DEPTH OF COMPLETED WELL 14.6 (Feet)       CASING (S)       DEPTH FROM SURFACE     BORE- HOLE HOLE (Inches)       TYPE ( $ \preceq $ ) $\frac{1}{2}$ MATERIAL / GRADE       NOTAL DEPTH FROM SURFACE     DEPTH HOLE (Inches)       TYPE ( $ \preceq $ ) $\frac{1}{2}$ MATERIAL / GRADE       NOTAL DEPTH FROM SURFACE       DEPTH HOLE (Inches)       TYPE ( $ \preceq $ ) $\frac{1}{2}$ MATERIAL / GRADE       NOTAL DEPTH FROM SURFACE       DEPTH FROM SURFACE       DEPTH (Inches)       TYPE ( $ \preceq $ ) $\frac{1}{2}$ MATERIAL / GRADE       DEPTH FROM SURFACE       DEPTH FROM SURFACE       DEPTH FROM SURFACE       DEPTH FROM SURFACE    ONULAR MATERIAL (Inches)       MATERIAL / GRADE       DEPTH FROM SURFACE       DEPTH FROM SURFACE       DEPTH FROM SURFACE       ANNULAR MATERIAL (Inches)       TYPE ( $ \preceq $ )       MATERIAL / GRADE       SURFACE    <			DEPTH OF STATINE COTOC	1/2/12
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	I I I		WATER LEVEL $41.0210$ (Pt.) & DATE ME	Air lift
TOTAL DEPTH OF COMPLETED WELL14.6(Feet)       * May not be representative of a well's long-term yield.         DEPTH FROM SURFACE       BORE HOLE DIAL (indres)       TYPE ( $\leq$ ) (indres)       MATERIAL GRADE       MATERIAL DIAMETER DIAL (indres)       MATERIAL Strength       GAUGE OR WALL (indres)       SLOT SIZE (FANY (incres)       DEPTH FROM SURFACE       ANNULAR MATERIAL TYPE         PL       0       FL       WATERIAL/ (indres)       INTERNAL GRADE       GAUGE OR WALL (incres)       SLOT SIZE (FL to PL. ( $\leq$ ) ( $\leq$ ) ( $\leq$ ) ( $\leq$ )       FILL ( $\leq$ ) ( $\leq$ ) ( $\leq$ )       FILL ( $\leq$ ) ( $\leq$ ) ( $\leq$ )       FILTER PACK ( $\leq$ ) ( $\leq$ ) ( $\leq$ )         * \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$	TOTAL DEPTH OF BO	DRING <u>146</u> (Feet)	1 1	
DEPTH FROM SURFACE       DEPTH HOLE       ANNULAR MATERIAL TYPE ( $\preceq$ )         FROM SURFACE       DEPTH HOLE       TYPE ( $\preceq$ )       Material / B B S S B Z       INTERNAL GRADE       GAUGE DIAMETER DIAMETER GRADE       SLOT SIZE IF ANY (Inches)       DEPTH FROM SURFACE       ANNULAR MATERIAL         ¥ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½ ½				
FROM SURFACE       BOHE DIA. (Inches)       TYPE ( $\leq$ ) Bohe DIA. (Inches)       TYPE ( $\leq$ ) Bohe Bohe DIA. (Inches)       MATERIAL / BRADE       INTERNAL GRADE       GAUGE OR WALL THICKNESS       SLOT SIZE (Inches)       FROM SURFACE       TYPE ( $\leq$ )       TYPE ( $\leq$ )         FL       to Bohe Bohe Cast All States       to Bohe Bohe Cast All States       MATERIAL / (Inches)       INTERNAL GRADE       GAUGE OR WALL THICKNESS       SLOT SIZE (Inches)       FROM SURFACE       TYPE ( $\leq$ )       TYPE ( $\leq$ )       FILL ( $\leq$ )				
DIA.       Image: Second and Second a		BORE-		
************************************		DIA. 놀 프 드 등 뿐 MATERIAL / INTERNAL GAUG	E SLOT SIZE	E- BEN-
************************************	Ft. to Ft.	(Inches)	SS (Inches) I Ft. to Ft.	(TYPE/SIZE)
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	W # # E VIV V 2 2 VV			
A <sup>+</sup> 1.5       .27       10" X       Steel       6.5/8"       188         27       33       7.5" X       Steel       6.5/8"       188         33       146       6·1/8"       OPEN HOLE       Image: construction c		<del>X % X X <b> X</b> </del>	*** X C /	
27.       33       7.5" X       Steel 65/8".188         33       146       61/8"       OPEN HOLE         6       106       X       PVC       4" Sch 40         106       1 4Grachments ( $\leq$ ) X       PVC       4" Sch 40         106       1 4Grachments ( $\leq$ ) X       PVC       4" Sch 40		10" X Steel 6.5/8" 1	28	
6       106       X       PVC       4"       Sch 40       i       <			188	
106       1 4TGTACHMENTS (≤) X        Geologic Log	33 146 6			
Geologic Log     Well Construction Diagram     Geophysical Log(s)     Soil/Water Chemical Analyses     X Other <u>See Map</u> ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.     I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.     NAME <u>Diamond Core Drilling, Inc.</u> P.O. Box 491925 <u>Redding, CA 96049</u> State ZIP     Signed C-57 LICENSED WATER WELL CONTRACTOR     DATE SIGNED     C-57 LICENSED WATER WELL CONTRACTOR				
Geologic Log        Well Construction Diagram        Geophysical Log(s)        Soil/Water Chemical Analyses        X OtherSeeMap         ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.	106 14 БТАСНА	1ENTS ( $\leq$ ) X PIVC 4" Sch	+ 0 OF 2 IFICATION STATEMENT -	t of my knowledge and ballof
Geophysical Log(s) Soil/Water Chemical Analyses X Other SeeMap ATTACH ADDITIONAL INFORMATION, IF IT EXISTS. ADDRESS Signed Signed Signed GLUL CONTRACTOR ADDRESS GLUL CONTRACTOR ADDRESS CLUL CONTRACTOR ADDRESS ADDRESS CLUL CONTRACTOR ADDRESS CLUL CONTRACTOR ADDRESS	-	Dg		a or my knowledge and beller.
Geophysical Log(s) Soil/Water Chemical Analyses X Other SeeMap ATTACH ADDITIONAL INFORMATION, IF IT EXISTS. ADDRESS Signed Signed Signed GLUL CONTRACTOR ADDRESS GLUL CONTRACTOR ADDRESS CLUL CONTRACTOR ADDRESS ADDRESS CLUL CONTRACTOR ADDRESS CLUL CONTRACTOR ADDRESS		ruction Diagram	re Urilling, Inc.	
_X Other <u>See Map</u> ATTACH ADDITIONAL INFORMATION, IF IT EXISTS. Signed C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER		il Log(s)		/ 9
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS. Signed C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER		4000500		
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER		CORMATION IF IT FYISTS Signed		
DWR 188 REV. 05-03 IF ADDITIONAL SPACE IS NEEDED LISE NEXT CONSECUTIVELY NUMBERED FORM POR 03 78836	DWB 188 REV. 05-03	C-57 LICENSED WATER WELL CON		GNED C-57 LICENSE NUMBER



File Ora DIVISIO P. O. E	INAL ginal, Duplicate and Triplicate with NOF WATER RESOURCES BOX 1079 AMENTO 5. CALIFORNIA	STATE OF CA DEPARTMENT OF DIVISION OF WA	PUBLIC WORKS	- 1 12	еет 1 571, т. Э., у
	WATER	WELL DRILLERS R (Sections 7076, 7077, "078, Water Code)	EPORT 6	<b>Do No</b> State Well No. Other Well No. Region	
(1)	Driller: Name	calif. St. mg Calif. Classification C 57	(2) Proposed use or u Domestic Im- Imgation T Domestic and Imigation T Other	Municipal 📃	Equipment used (cbeck): Rotary Cable Dug well Other
	Owne Name Addres		(4) Type of work (c) New well Z Deepening existing	Reconditioning	of well

Depth From Ground Surface

Give details of tormations penetrated, such as silt, peat, muck, sand, gravel, clay, shale, sandstone, hardpan, rock. Include size of gravel (diameter) and sand (fine, medium, coarse), color of material, structure (loose, packed, cemented, soft, hard, brittle).

 ****				
	ft.	to 45	ft.	clay boulding)
		» 171	,,	PDO: ACH
171	,,	» / J Ø	- ,,	Received and
/ <u></u>			-	Climent graver
128	,,	"	- ''	- Lue clay
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If additional space is required, continue on DWR Form No. 246-Supplement, and attach to respective report copies.

LENGTH FT. 96		SINGLE, DOUBLE, WELDED. OTHER SINGLE WILD	LBS. PER FOOT OR GAGE OF CASING	SEATING BELOW GROUND SURFACE. FT.
				·
	•			

	jinal, Duplicate and Triplicate with the N OF WATER RESOURCES NOX 1079			SHEET 2
		VELL DRILLERS ctions 7076, 7077, 7078, Water Cod		Do Not Fill/In State Well No. Other Well No. Region
(7)	Perforations:	-		·
	Type of perforator used Perforated	Round to the 96	it. Hole size 1/2	No. of holes 375
	)) ))	•••••••	••••••	•• •• •• •• •• ••
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	,,,	······ · · · · · · · · · · · · · · · ·	 	· · · · · · · · · · · · · · · · · · ·
(8)	Water levels:	(9)	Well pumping test: BAi/e	r
	Depth at which water			
	first encountered	<b>2</b> /ft.	Depth to water when test started	fer Forter
	Depth to water		G.P.M. at beginning of test	<u>.</u>
	before perforating	ft.	Drawdown from standing level	f60ft.
	Depth to water	~		3
	after perforating 60	<u>/t</u> t.		. /60
			- 1 C + 1 / / / / / / / / / / / / / / / / /	
	Note any change in water l		Length of time tested	<b>*</b> -
			Length of time tested Temperature of water Was gas present in water?	<u>6</u>
	Note any change in water l		Temperature of water	<u>6</u>
(10)	Note any change in water l General:	evel while drilling	Temperature of water Was gas present in water? Ye	es ZNO
(10)	Note any change in water l General: Was well gravel packed?	evel while drilling 	Temperature of water & Was gas present in water? kThick	ness of pack
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32NOF#20 ORIGINAL STATE OF CALIFORNIA Do not fill in THE RESOURCES AGENCY **File with DWR** No. 113052 DEPARTMENT OF WATER RESOURCES WATER WELL DRILLERS REPORT Intent No. State Well No.\_ Loca mit No. or Date\_ Other Well No.\_ (12) WELL LOG: Total depth 53 ft. Depth of completed well 5.3 from ft. ft. Formation (Describe by color, character, size or material) to ---(2) LOCATION, OF WELL (See instructions): \_ County 51: ASTA \_\_\_\_Owner's Well Number\_ \_ Well address if different from above SAME 31 Township 32 N Range RLU 5 Section 20 RINE JTR Distance from cities, roads, railroads, fences, etc. CIAY SANG 100' EAST Iron (3) TYPE OF WORK: New Well 🗙 Deepening 🗆 Reconstruction Reconditioning Horizontal Well Destruction [] (Describe destruction materials and procedures in Item 12) (4) **PROPOSED** Domestic Irrigation . Industrial Test Well n Stock Municipal WELL LOCATION SKETCH Other (5) EQUIPMENT: (6) GRAVEL PACK: Rotary Reverse N 🗆 No Size Cable Air ter of bore Other Bucket A nom (7) CASING INSTALLED: 1984 (8) PERFORATIONS: Steel Plastic 📋 Cy Type of perfer n or From То Dia. Gage From \_ Τn ft. ft Wall >in. fħ ft. 0 \_ ---(9) WELL SEAL: \_ Was surface sanitary seal provided? Yes D No D If yes, to depth 38\_\_\_\_\_ \_ft. \_ Were strata sealed against pollution? Yes 🗌 No Interval\_ ft \_ Method of sealing Rente Work started 19\_ Completed\_ (10) WATER LEVELS: WELL DRILLER'S STATEMENT: Depth of first water, if known\_\_\_\_ NO ft This well was drifted under my jurisdiction and this report is true to the best of my Standing level after well completion\_Flows knowledge and \_ft. (11) WELL TESTS: 480 SIGNED\_ Was well test made? Yes 🗆 No figure, by whom?\_ Pump 🗍 Type of test Bailer 🔲 Air lift NAME Depth to water at start of test\_NO ft. At end of test ft printed) 2 gal/min after Flow hours Disch Rd, Address Water temperature\_ No Fif yes, by whom? Chen nalysis made? Yes 📋 City No diff yes, attach copy to this report Was electric log made? Yes 🗋 License No. Date of this repor

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED. USE NEXT CONSECUTIVELY NUMBERED FORM

•	
ORIGINAL	WATER WELL DRILLERS REPORT
File Original, Duplicate and Triplicate with the	(Sections 7076, 7077, 7078, Water Code)
JEGIONAL WATER POLLUTION	(Sections / 0/0, / 0/7, / 0/0, water Code)
CONTROL BOARD No	STATE OF CALIFORNIA

Do Not Fill In Nº 38644

wallow her bound

In Keswick Town	

In Keswick I own

(2) LOCATION OF	WELL:
County SHASTA	Owner's number, if any-
R. F. D. or Street No. 107	1+2 BLOCK 20
JONES SUBDI	VISION TO SOUTH HARK

(3) TYPE C	F WORE	K (che	(k):		м. М		
New well	Deepening	s 🗆	Recon	ditio	ning 🔲	Ab	andon 🗌
If abandonment, d	escribe mater	ial and pr	ocedure in	Iten	11.		
(4) PROPOS	ED USE	(cbeck	k):		(5) <sup>°</sup> I	EQUIPM	IENT:
Domestic X Irrigation 🔲					Rot Cab Dug		
(6) CASING		LLED:	Gaj		If gr	avel pacl	ked
From O ft. to	48 ft.	Diam.	ン -	: D	iameter f Bore	from ft.	to ft.
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Type and size of shoe	or well ring L	LX Sta	·x6	Si	ze of gravel	:	
Describe joint P	シアナ	WE	LD				

## (7) PERFORATIONS:

Type of p	erforstor used	HURS	VEL				
Size	of perforations			in., length, by			in.
From	3 V ft. to 4	8 ft.	6	Perf. per row	4	Rows p	er ft.
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## (8) CONSTRUCTION:

	nitary seal provided?	Yes No To what depth	ft
Were any strata	ealed against pollution? [	Yes No If yes, note depth of strata	
From	ft. to	ft.	
	e 1		

# Method of Sealing

## (9) WATER LEVELS:

Depth at which water was first found	32	ft.
Standing level before perforating		ft.
inding level after perforating	10'	ft.

# (10) WELL TESTS:

Yield:	gal./min. with	191	ft. draw down after	2	hrs.
Temperature of water	640	Was a chemical	analysis made? 🔲 Yes	X No	

					2N/5	
) WEI					. 7	
depth	48 '	ft. Dept	h of comple	ted well	48	
ation: Desc	ribe by color, cl	baracter, size	of material	and structure	.0	Λ
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WELL DRILLER'S SIAIEMENT: This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME ጥ Address ONT SIGN Well Drille Dated\_ License No.

95689 3-54 50M QUIN 8 SPO

DWR FORM NO. 246 (REV. 3-54)

ORIGINAL File with DWR		R	EC	EI	VED		OF CALIF PLETI		NIA N <b>REPOR</b>	т		3	WRU Z. A		LY -		
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DWR	188	REV.	7-90

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IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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SPACE IS NEEDED LISE NEXT CONSECUTIVELY NUMBERED FOR 

ORIGINAL DWR DO NOT FILL STATE OF CALIFORNIA **File with DWR** WELL COMPLETION REPORT Refer to Instruction Pamphlet No. 0957748 STATE WELL NO./STATION NO Page \_\_\_\_ of Owner's Well No. Date Work Began 12-11-06, Ended 12-12.06 LONGITUDE LATITUDE Local Permit Agency Shuster APN/TBS/OTHER Permit No. 06-390 \_\_\_\_ Permit Date \_\_\_\_\_6 WELL OWNER GEOLOGIC LOG ORIENTATION (∠) \_\_\_\_\_ VERTICAL \_\_\_\_\_ HORIZONTAL \_\_\_ DRILLING ANGLE (SPECIEY) METHOD FLUID DEPTH FROM DESCRIPTION SURFACE Describe material, grain size, color, etc. to Ft. Ft. WELL LOCATION Address 16023 Ô Brown Joil 3hurra City 2 24 Fral Tored Oran Ġounty-5harta Parcel 065-320-02200 APN Book Page \_ Township 1321 Range 5w Section 39 21 153 Blue loren Pat 📿 Long\_ DEG. DEG. SEC. MIN. MIN SEC: ノンラング 160 YLALTY. 1080 LOCATION SKETCH ACTIVITY (∠) - NORTH NEW WELL MODIFICATION/REPAIR \_\_\_\_ Deepen Hary 299 \_ Other (Specify) DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG" 11 11 USES (∠) WATER SUPPLY well Domestic . Public \_ Irrigation \_ Industrial EAST MONITORING . Middle Crk TEST WELL CATHODIC PROTECTION HEAT EXCHANGE DIRECT PUSH INJECTION VAPOR EXTRACTION SPARGING SOUTH Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE. REMEDIATION OTHER (SPECIFY) WATER LEVEL & YIELD OF COMPLETED WELL DEPTH TO FIRST WATER 15 (Ft.) BELOW SURFACE DEPTH OF STATIC `گ WATER LEVEL ESTIMATED YIELD \* 80-100 (GPM) & TEST TYPE TOTAL DEPTH OF BORING / (Feet) TEST LENGTH \_\_\_\_\_ (Hrs.) TOTAL DRAWDOWN\_ TOTAL DEPTH OF COMPLETED WELL \_\_\_\_\_\_\_\_\_(Feet) \* May not be representative of a well's long-term yield. CASING (S) ANNULAR MATERIAL DEPTH FROM SURFACE DEPTH FROM SURFACE BORE-TYPE TYPE(∠) HOLE INTERNAL SLOT SIZE DIA. BLANK SCREEN CON-DUCTOR MATERIAL / GAUGE BEN-CE-OR WALL FILTER PACK (TYPE/SIZE) DIAMETER (Inches) MENT TONITE FILL GRADE Et. Et. Et. Et. to (Inches) (Inches) to (∠) (ビ) (⊻) 28 Ó 20 STEE 1 1999) 0 1\_ 0 1/3 24 ~ 120 2" ٤-Sch 40 AIVIC 6" YBX4 XA 160 Sch.40 î. 1 Dir. 4 Rows CERTIFICATION STATEMENT ATTACHMENTS (∠) I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief. Geologic Log NAME Sharsta Drilling Well Construction Diagram (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED) Geophysical Log(s) Redelm CT \_ Soil/Water Chemical Analyses ADDRESS Other . 12.14-06 ATTACH ADDITIONAL INFORMATION, IF IT EXISTS. LICENSED WATER WELL CONTRACTOR DATE SIGNED C-57 LICENSE NUMBER OSP 03 78836 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM DWR 188 REV. 05-03

SHASTA COUNTY DEPARTMENT	COF RESOURCE MANAGEMENT
ENVIRONMENTAL 1855 Placer Street, Suite 201, Redding, CA-96001	HEATTH DIVISION
PROPERTY OWNER	LOCATION OF PROPERTY         Street or Road
$\frac{\text{WELL CONTRACTOR}}{\text{Name}  \mathcal{Kalter}  \mathcal{Reding}  \mathcal{Kalter}  \mathcal{Reding}  \mathcal{Kalter}  \mathcal{Reding}  \mathcal{Kalter}  \mathcal{Reding}  \mathcal{Kalter}  \mathcal{Reding}  \mathcal{Kalter}  Kalter$	PROPOSED USE       * REQUIRED ANNULAR SEAL DEPTH         Clomestic       20 foot minimum         Agricultural       20 foot minimum         Industrial       50 foot minimum         Public       50 foot minimum         Monitoring       Varies, attach schematic.         Other       Varies, attach schematic.         * Alternate seal depth may be required by site conditions or as noted in conditions below. Minimum thickness of annular space seal is 2 inches.
<u>PLOT PLAN</u> is to be submitted on <u>OMACH</u> oncention of attached instructions and show <u>all</u> requested information. <u>DIRECTIONS TO LOCATE PROPERTY</u> are to be provided on the back of this application or the back of the plot plan. Directions must be adequate for staff to locate property. <u>WELL NUMBER</u> (If applicable):	SIGNATURE OF OWNER (required on all applications)         I certify that I have read this application and the above         information is correct. I agree to comply with all Shasta County         Ordinances and State Laws relating to this construction, and         hereby authorize representatives of SHASTA COUNTY to enter         the property for inspection purposes.         By signing this application I agree to defend, indemnify, and         hold the county harmless from any claim, action, or proceeding         brought to attack, set aside, void or annul the county's approval of         this application.         I understand that the Shasta County Department of Resource         Management, in releasing this permit for the immediate         construction of a water well does not guarantee the issuance of         any other development permits or land use request for this         property.         Mathematication         SIGNATURE OF OWNER       DATE
Permission is hereby granted for the above well work in accordance with all S Sections 8.56.010 - 8.56.130 and any conditions as set forth in this permit. Well is to be located a minimum of 50 feet from any sewer, septic tank, or allow sewage to percolate into the ground.  This permit is subject to the a Final inspection by	Allowing and any attached conditions. Date <u>12/05/06</u> State and County laws and standards as provided in Shasta County Code, r pit privy and a minimum of 100 feet from any structure or facility designed to ttached conditions if box is marked. Date
Completion Notice Received: Date Well Depth	Casing Depth Estimated g.p.m

e Original, Duplicate and Triplicate with the (Sections 7076, EGIONAL WATER POLLUTION	DRILLERS REAST ORT	LOCA BONDER INCHEC Nº 15811 State Well No.
ONTROL BOARD No. 5 STATE O	F CALIFORNIA	Other Well No. 32N/5W
	(11) WELL LOG:	
	Total depth 84 ft. D	Depth of completed well 34
Victoria Highlands	Formation: Describe by color, character, a	size öf material, and structure.
	<u>ft. w</u> fr.	Carl + Shand
2) LOCATION OF WELL:	96 40	Ancree
ounty Shorth Over's sugar, if ar	. 46 . 84 .	Rock.
F. D. or Street No. 10/56 Uletore A., Real		
lover Springer Sul! 960	Ž	
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Null 1990 tot Bay		· · · · · · · · · · · · · · · · · · ·
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3) TYPE OF WORK (check):	•• ••	
iew well 🛛 Deepening 🗋 Reconditioning 🔲 Abandon		
abandonment, describe material and procedure in Item 11.	· · · · ·	
4) PROPOSED USE (check): (5) EQUIPMEN		
Domestic Andustrial Annuicipal Cable		
rrigation Test Well Other Dug Well	<hr/>	
6) CASING INSTALLED: If gravel packed		
INGLE DOUBLE Gage Diameter from	to	
rom ft. to ft. Diss. Wall of Bore ft.		
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ype and size of shoe or well ring Mond Size of gravel:	- nin	ute
escribe joint full ded.	=	
7) PERFORATIONS:	······································	off draw deman
ype of perforstor used The pho Cut		
ize of perforations DIC Brand in., length, by	in. "	
rom ft. to ft. Perf. per row Rows per		······································
40 60 4 4	- " "	$\wedge$
	- " /	Sec
8) CONSTRUCTION:		
'as a surface sanitary seal provided? 🗌 Yes 🗌 No To what depth	ft	· .
'ere any strata sealed against pollution? 🗋 Yes 🚺 No If yes, note depth of strata	tt 14	Con S /
rom ft. to ft.		Code
" " fashad af Calling		
fethod of Sealing	= Vort surved find 97 1	2. Completed for 29 19
9) WATER LEVELS:	WELL DRILLER'S STATEMENT	
epth at which water was first found 440	This well was drilled under my ft. my knowledge and balief.	jurindiction and this report is true to the be
anding level before perforating 2. 4	T. NAME FRED W/	HLANS 531
nding level after perforsting 9 34	ft. (Perma, form, or co	epcestion ; :I sted or printed)
	- Address Mr 2, Art	6624 ····
10) WELL TESTS:	- Buder Son	Call
as a pump test made? [] Yes [] No If yes, by when?	- Isran Hrid W.	ulliant
		Vell Driller
emperature of water Was a chemical analysis mode? 🚺 Yes 🚺 No	License No. // //	Dated July 59

ORIGINAL			
File Original	Duplicate	and	Trin

File Original, Duplicate and Triplicate with the **REGIONAL WATER POLLUTION** 

#### WATER WELL DRILLERS REPORT

STATE OF CALIFORNIA

(Sections 7076, 7077, 7078, Water Code)

Do Not Fill In Nº 69380 State Well No.

3 Other Well No...

	NTROL BOARD No.
	· · · · · · · · · · · · · · · · · · ·
•	
:	Lower Springs Road

### (2) LOCATION OF WELL:

County Shatta Owner's number, if any-

R. F. D. or Street No.

······································							
(3) TYPE OI New well X f abandonment, des	Deepenin	g 🗆	Recondit			AI	bandon
(4) PROPOSI	ED USE	(cbeck)	:	1	(5) H	QUIP	MENT
Domestic 🕅 Irrigation 🗌 7				]	Rot: Cab Dug		X
(6) CASING		LLED:			If gra	avel pac	ked
From ft. to	BLE	Diam,	Gage or Wall		Bore	from ft.	
D 61	1 8	10	2				
2 -21	DI	12				* *	
						4.1	
	· ·	**	• •				
	••						
was and suga of shoe or	well sing 1	MAL -		Size	of gravel.		

welle Describe joint (7) PERFORATIONS: tores Type of perforato- used Size Nor of perforations in., length, by i From Rows per f Perf. per row .. .. .. .. .. .. .. .. .. •• ••

Size of gravel:

• •

• .. •••

#### (8) CONSTRUCTION:

Was a surface sanit	ary seal provided?	Yes [	] No T	o what depth	
Were any strata sea	ed against pollution?	🗌 Yes	□ No	If yes, note depth of strata	
From	<i>(</i>			4-	

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### Method of Sealing

Type and size of shoe or well

(9) WATER LEVELS	
Depth at which water was first found	43
"	<i>QO</i>

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### (10) WELL TESTS:

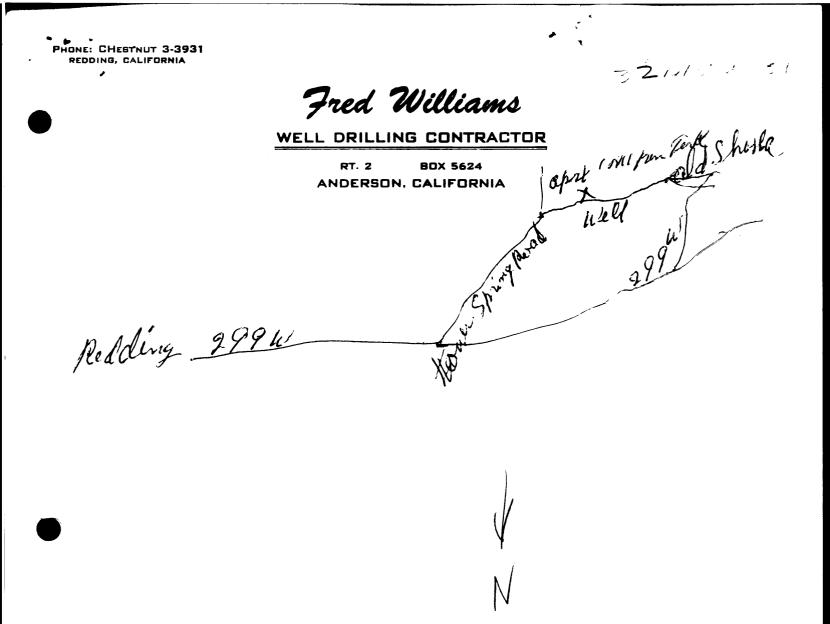
ting level after perforating

Was a pump test made?	🗌 Yes 🔲 No	If yes, by whom?				
Yield:	gal./min. wit	h	ft. draw do	wn after		hrs.
Temperature of water		Was a chemical an	alysis made?	🗋 Yes	No No	
Was electric log made of	f well? 🗌 Yes	□ No				

	40	character, size of material, and structure. fr. Sand Store Clay Sand Store
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Work started	M 2 9	F 1961. Completed def 2 19
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WELL DRIL This well u		TEMENT: nder my jurisdiction and this report is true to the be
ny knowledge	e and belief.	· · · · · ·

L.C. [SIGNED].... Well Driller License No. Dated R.C.

57025 6-57 50M QUIN A SPO



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32N/5W-3 STATE OF CALIFORNIA Do not fill in ORIGINAL THE RESOURCES AGENCY No. 116007 **File with DWR** DEPARTMENT OF WATER RESOURCES WATER WELL DRILLERS REPORT of Intent No. State Well No. al Permit No. or Date\_\_\_\_ Other Well No.\_\_ 12 WELL LOG: T all depth 100 ft. Depth of completed well 100 ft. 1 mile NNW of Grant School Des the by color, character, size or material) (2) LOCATION OF WELL See instructions County\_\_\_\_\_\_County\_\_\_\_\_Owner's Well Vier market 6a Well address if different from ab Township\_ \_ Distance from cities, mads, railr ads, fences, etc. \_ 5 miles ব COVALEV ram S Nb P D'a sur  $' \circ$ 9 01/0 ---Thex 4/2 VO N O TYPE OF WORK: \_ 3 1ka Ven Well 🗹 Idd 1 Deepening -00 \_ Reconstruction  $\Box$ \_ Reconditioning С \_ Horizontal Well \_ Destruction [] (Describe destruction materials and procedures in Item 12) ---(4) **PROPOSED USE:** \_ ৬৯ Domestic Ż -Prev Irrigation \_ Industrial ----A Test Well \_ Stock Swaze OVIVO Municipal ----WELL LOCATION SKETCH Other \_ (6) GRAVEL PACK: (5) EQUIPMENT: \_ 11 Rotary Reverse 🗌 Yes 🗍 \_ OP. Cable Z Air Diameter of \_ Other Bucket Packed from\_ ft. to (8) PERFORATIONS: (7) CASING INSTALLED: -Type of periora Steel M Plastic 🖂 \_ Concrete 🖸 are of screen. or From From То Dia. Gage or To Slat Wall ft. ft. ft ft. size in. \_ ΛC ſ ---\_ \_ (9) WELL SEAL: -No 🗆 If yes, to\_depth\_38 Was surface sanitary seal provided? Yes Z ft. \_ Were strata sealed against pollution? Yes 🗋 No Z Interva Cut Method of sealing Drill 144 119 Work started 19\_7 Completed. 19 (10) WATER LEVELS: WELL DRILLER'S STATEMENT: 5 Depth of first water, if known This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief. knowledge Standing level after well completion. SIGNED D (11) WELL TESTS: 0 L Was well test made? If yes, by Yes 1 No 🗋 C. ROBERT "MCCULLOUGH Pump Air lift 🚺 Type of test Bailer 🕑 NAME 53 Depth to water at start of test PErcented oDrillingtidine Typetter printed At end of test Address Water temperature arge\_ gal/min after hours P. O. BOX 3117 No If yes, by whom? City nical analysis made? Yes 🗔 Zio 3 REDOTING. CALIF. 95001 Was electric log made? If yes, attach copy to this report Yes 🗆 No License No

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED. USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGIN								OF CALIF			JSE ONLY -	DO NOT FILL IN
	th DWR <u>/_</u> of <u> </u>	SEP	0	3 20	14	WELL	COMP Refer to Li	<b>LETI</b>	ON REPOI	RT   LEIZANN U	STATE WELL NO	D./STATION NO.
Owner	s Well No					, Ended <b>8-</b>	N	o. 09	52001			
Date W	ork Began	8.2	7-	14		, Ended _8-8	77-14	,		LATITU	DE	LONGITUDE
Local	Permit Ag	gency 🛌	5/.	<u>as</u> ,	T <u>C</u>						APN/TRS	
Per	mit No. 🖊	7-23	-6 -61		CTC	Permit	Date	-27-	<u>т</u>		OWNER -	
	ATION (∠)	VE										
			G Z	21	~	FL			Victor	ia Drive		
SL	TH FROM IRFACE				J	DESCRIPTION			Victor	la DIIve		
	to Ft.		_			erial, grain size I				inewell	location —	
		- NEC	~	-95 -	<i>v</i> .							
15	80	FYLL	cte	īv.	20	grani	T		County	·		4-130-010
C.						grani mit			APN Book	Page	_ Parcel <b>20</b>	4-130-010
80	100	1510	e	<u>g v</u>	a	htt						<u> </u>
								·	DEG.	MIN. SEC.	Long	EG. MIN. SEC.
		1								CATION SKETCH		ACTIVITY (∠) — New well
	· ·								_			MODIFICATION/REPAIR
	1	 							-			Deepen Other (Specify)
	1 	1										DESTROY (Describe
	1	1										Procedures and Materials Under "GEOLOGIC LOG")
		 							4			USES ( $\leq$ )
	) 	t r						· · ·	-			WATER SUPPLY
	1	T I		·					WEST		EAST	Irrigation Industrial MONITORING
	1	1				· · ·					Ê	TEST WELL
	1	1		_					4			CATHODIC PROTECTION HEAT EXCHANGE
	1	1							_			DIRECT PUSH
	, , ,								-			
	1 1	1				-						SPARGING
	   	1   							Illustrate or Describe	Distance of Well from h	oads, Buildings,	
	1	I				· · ·			<ul> <li>Fences, Rivers, etc. a necessary, PLEASE</li> </ul>	nd attach a' map. Úse add BE ACCURATE & COM	litional paper lj <b>IPLETE.</b>	OTHER (SPECIFY)
	1	1 1 1					<u>.</u>			R LEVEL & YIELI		
-	1	1								WATER <u>80</u> (Ft.)		
	; 	1 [ ]							DEPTH OF STATIC WATER LEVEL	20 (Ft.) & DA	TE MEASURED _	8-27-14
	1								ESTIMATED YIELD	; <b>d O</b> (GPM) (	K TEST TYPE 🚅	217
	DEPTH OF					eet) <u>100 (</u> Feet)				(Hrs.) TOTAL DRA resentative of a well's		<b>4</b> (Ft.)
TOTAL			1		/s:				witty non be repr		- yield.	
	EPTH SURFACE	BORE-		YPE (	~ )	C	ASING (S	)		DEPTH FROM SURFACE		ULAR MATERIAL TYPE
		HOLE DIA.				MATERIAL /	INTERNAL	GAUGE			CE- BEN-	
Ft.	to Ft.	(Inches)		SCREEN CON-	FILL PIPE	GRADE	DIAMETER (Inches)	OR WA		Ft. to Ft.	MENT TONITE	(TYPE/SIZE)
0	24	10"								0 24	V	
24	6	6	1000	_	1	STEEl	6	188	3			
00	- <i>120</i>	6		_	+	Adr	4	Sch4				
80	100	6	ν	1	·   _	ANTE	4	Sch 4				
	1 1					1						
		HMENTS	(⊻)	. —		I, the unde	ersigned. of	ertify that t		ATION STATEMEN te and accurate to th		nowledge and belief.
	Geologia	-	in c			11	1		*		- added of thy K	
		nstruction D sical Log(s)	lagrai	TÌ		NAME (PERS			(TYPED OR PRINJED)	<u> </u>		
		er Chemical	Ana	lyses		1660	02	V lac	limir	cT Rea	Klm,	cA 96001
	Other					- ADDRESS	1. 1	$\mathcal{A}$	114	CITY	«, , , , ,	STATE ZIP
АТТАСН	ADDITIONAL	INFORMATIC	ON, II	F IT E.	<i>kists</i>	Signed C-57	LICENSED WAT	ER WELL CON	TRACTOR		DATE SIGNED	-1 073314 C-57 LICENSE NUMBER

OSP 03 78836

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

FNVIRONMENTAL	T OF RESOURCE MANAGEMENT HEALTH DIVISION
1855 Placer Street, Suite 201, Redding, CA 96001	Telephone (530) 225-5787         FAX (530) 225-5413           caus         # BP
ehd.co.shasta.	
Fee \$287.17 APPLICATION FOR W	VATER WELL PERMIT # WTR
APPLICANT (Must be <u>licensed contractor</u> or <u>property owner</u> .)	LOCATION OF PROPERTY Street or Road
· · · · · · · · · · · · · · · · · · ·	LOT SIZE x or acreage
· · · · · · · · · · · · · · · · · · ·	TYPE OF WORK
PROPERTY OWNERSAME	New Well Deepening Destroying Recondition
Mailing Address	PROPOSED USE * REQUIRED ANNULAR SEAL DEP
City, State, Zip Code	Domestic
	Agricultural
EMail Address	🗌 Industrial
WELL CONTRACTOR	Public 50 foot minim
WELL CONTRACTOR Shasta Dalling The	Monitoring Varies, attach schem
Mailing Address 16602 Vladimar Court	Other Other
Name	* Alternate seal depth may be required by site conditions or as noted in
Telephone <u>530-224 - 4120</u>	conditions below. Minimum thickness of annular space seal is 2 inches.
EMail Address	Proof of legal creation is required on undeveloped propertie
PLOT PLAN is to be submitted on <u>81/2 x 11</u> sheet according to the Sample Plot Plan instructions and show <u>all</u> requested information.	SIGNATURE OF OWNER (required on all applications) I certify that I have read this application and the above
DIRECTIONS TO LOCATE PROPERTY are to be provided on	information is correct. I agree to comply with all Shasta County Ordinances and State Laws relating to this construction, and
he back of this application or the back of the plot plan. Directions	hereby authorize representatives of SHASTA COUNTY to enter
nust be adequate for staff to locate property.	the property for inspection purposes.
	By signing this application I agree to defend, indemnify, and hold the county harmless from any claim, action, or proceeding
<u>WELL NUMBER</u> (If applicable):	brought to attack, set aside, void or annul the county's approval
entrate facts among the constraint to the t	this application.
SIGNATURE OF CONTRACTOR (if applicant is contractor) I certify that I am licensed under the provisions of Division 3, Chapter 9 of the Business and Professions Code, and my	I understand that the Shasta County Department of Resource Management, in releasing this permit for the immediate construction of a water well does not guarantee the issuance of
license is in full force and effect. License #	any other development permits or land use request for this
I certify that I have read this application and the above information is correct. I agree to comply with all Shasta County	property 12 mll
Ordinances and State Laws relating to this construction.	1 Wateria 1 12 200 M/14- 6-23-14
	SIGNATURE OF OWNER DATE
SIGNATURE OF CONTRACTOR DATE	
Received by Date Z IP Fee \$	Receipt # Active Arrow of Pre-Permit Insp Required? Y
	······································
Granted by <u>Anderson with the follow</u> with the follow	wing and any attached conditions. Date <u>2010</u>
Permission is hereby granted for the above well work in accordance with code, Sections 8.56.010 - 8.56.130 and any conditions as set forth in thi	
Well is to be located a minimum of 50 feet from any sewer, septic tan	-
esigned to allow sewage to percolate into the ground.  This permit is	· · · ·
inal inspection by	
, v <del></del>	
ispection Notes:	
nspection Notes:	

			5/2	. <del>С</del>	109							· · · · ·					and the advertised
	ORIGIN/ File with	ם DWR			•		WEL	L (	STATE O	LETI	0	N REPORT	32-N/				
ć,	Page /	of Well No							Refer to In. No	struction		<sup>mphlet</sup> 2 <b>415</b>	s.		ELL NO		
	Date Wo	rk Began.	5-12	8-	09	·	, Ended	5-1	8-09					J		LO	NGITUDE
)		Permit Ag nit No	jency 🛓	5/5	ees	<u>77</u> 2			Date			<u> </u>		AP	N/TRS/0	DTHER	
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	57	61	Fra	Ĝ	For	e	1 Cro	ten	WT-		-[] <	DEG. MIN.	SEC. SEC. FION SKETCH -	Long _	DE		MIN. SEC. TIVITY (∠)
				<u>)]];</u>	<u>ار ا</u> معرف	7			1-	2115	F	LUCA	NORTH				
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		1 1 1	1   	,							╘	- 	- SOUTH				SPARGING REMEDIATION
		1 1 1	1			•						Illustrate or Describe Dis Fences, Rivers, etc. and a necessary. <b>PLEASE BE</b> A	tance of Well from Road ttach a map. Use additio ACCURATE & COMP	ls, Build onal pap L <b>ETE</b> .	ings, er if	1	
		,       	, 1 1			•					-	WATER I	EVEL & YIELD	OF CC	OMPLI		WELL
	- <u> </u>	, 1 1	, , , ,					•				DEPTH TO FIRST WAT	ER <u>12</u> (Ft.) BE	LOW SU	JRFACE	E	4
		 										DEPTH OF STATIC	(Ft.) & DATE				8-08
		EPTH OF					eet)		•			ESTIMATED YIELD *	(GPM) & T (Hrs.) TOTAL DRAWI				
	TOTAL D	DEPTH OF	COMPLET	ED	WEL	<u> </u>		reet)				* May not be represen					
	DE	PTH SURFACE	BORE- HOLE			~		С	ASING (S)				DEPTH FROM SURFACE		ANNU		MATERIAL PE
			HOLE DIA. (Inches)	BLANK	) <u>aqy</u> scheen con-	DUCTOR	MATERIA GRADE		DIAMETER	GAUGE OR WAI		SLOT SIZE		CE- MENT	BEN- TONITE		FILTER PACK
	- Ft. 1	to Ft.		BLA	ES 00	FIL	GNADE	-	(Inches)	THICKNE			Ft. to Ft.	(ビ)	(≚)	( <u>∠</u> )	(TYPE/SIZE)
	23	43	10"	~	$\vdash$		5 <i>7 L</i> E	2/	6	. <i>189</i>	3		0 23		~		
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	60	100	6"	-		-	p-V-	<u>C</u>	4	Sch 4	6	030440	1				
			HMENTS									CERTIFICATI	ON STATEMENT				
··		- ATTAC		۱Ľ	, _		I, the	e unde	ersigned, ce	ertify that t	this	report is complete a		best of	my kn	nowledg	ge and belief.
)		Well Cor	nstruction Di	iagra	m		NAME	E <u>5</u> (PERS)	ON, FIRM, OR C	CORPORATION)	1	IPED OR PRINTED)	rc				
			sical Log(s) er Chemical	Ana	lyses			de	602	Vla	Ì	imir ei	- Red	lin		A	96001
	-	Other					ADDRES		ลกไม่	11.	Il	1+		-,,&	1	ŠTATE	ZIP 55374
	ATTACH A	ADDITIONAL	INFORMATIC	ON, I			[	C-57	LICENSED WATE					E SIGNED	- /	<u> </u>	-57 LICENSE NUMBER

DITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

SHASTA COUNTY DEPARTMEN	T OF RESOURCE MANAGEMENT
	, HEALTH DIVISION
1855 Placer Street, Suite 201, Redding, CA 96001	
1855 Placer Sireet, Suite 201, Redding, CA 20001 www.co.shasta.ca.us/Departmen	ts/Resourcemgmt/drm/ehmain.htm
	BP #
Fee \$265.35 APPLICATION FOR V	WATER WELL PERMIT # WTR <u>09-106</u>
	, 
	Street or Road GANIM LANE
-	Assessor's Parcel Number 204-130-009
	LOT SIZE x or acreage <b>2.0</b>
	TYPE OF WORK
ROPERTY OWNER	New Well Deepening Destroying Reconditioning
ame SAME ailing Address ity, State, Zip Code	
in State Zin Code	PROPOSED USE * REQUIRED ANNULAR SEAL DEPTH
elephone	Domestic
	Agricultural
<u>/ELL CONTRACTOR</u>	Public
ame SHASTA DRILLING ailing Address 16602 VLADIMIR COLLET	Monitoring
ity, State, Zip Code <u>REDDING</u> , CA. 96001	Other Varies, attach schematic.
elephone 530-229-9120	* Alternate seal depth may be required by site conditions or as noted in conditions below. Minimum thickness of annular space
cense #895374	seal is 2 inches.
A DE AND IN A submitted on 91/ x 11 about according to the	
LOT PLAN is to be submitted on 81/2 x 11 sheet according to the tached instructions and show all requested information.	SIGNATURE OF OWNER (required on all applications)
	I certify that I have read this application and the above
IRECTIONS TO LOCATE PROPERTY are to be provided on	information is correct. I agree to comply with all Shasta County
e back of this application or the back of the plot plan. Directions ust be adequate for staff to locate property.	Ordinances and State Laws relating to this construction, and hereby authorize representatives of SHASTA COUNTY to enter
Ust be adequate for stall to locate property.	the property for inspection purposes.
/ELL NUMBER (If applicable):	By signing this application I agree to defend, indemnify, and
	hold the county harmless from any claim, action, or proceeding brought to attack, set aside, void or annul the county's approval of
SIGNATURE OF CONTRACTOR (if applicant is contractor)	this application.
I certify that I am licensed under the provisions of Division 3,	I understand that the Shasta County Department of Resource
Chapter 9 of the Business and Professions Code, and my license is in full force and effect. License #	Management, in releasing this permit for the immediate construction of a water well does not guarantee the issuance of
I certify that I have read this application and the above	any other development permits or land use request for this
information is correct. I agree to comply with all Shasta County	property.
Ordinances and State Laws relating to this construction.	(Age L Lorson 4/20/09)
	Jan L. Jarson 4/20/09 SIGNATURE OF OWNER DATE
SIGNATURE OF CONTRACTOR DATE	S
	For \$ 01535 Receipt # 1/ 1/ 4/11/3411
eceived by Bin Date 4120101	
ranted by Mchamer with the follow	Eee \$ ? ( $\sqrt{.35}$ Receipt # $\cancel{K}$ ( $\frac{901091}{22/09}$ wing and any attached conditions. Date $\frac{9/22/09}{22/09}$
	h all State and County laws and standards as provided in Shasta County
and Continue 9 56 010 8 56 130 and any conditions as set 1000 ID U	nis permit.
Wolk is to be located a minimum of 50 feet from any sever, septic tal	nk, or pit privy and a minimum of 100 feet from any structure of facility
signed to allow sewage to percolate into the ground.	is subject to the attached conditions if box is marked.
nal inspection by	Date
spection Notes:	
	Cooring Dopth Estimated a p.m.
ompletion Notice Received: Date Well Depth	Casing Depth Estimated g.p.m

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ł OR MAL STATE OF CALIFORNIA SHEET 1 File Original, Duplicate and Triplicate with the BIVISION OF WATER RESOURCES DEPARTMENT OF PUBLIC WORKS DIVISION OF WATER RESOURCES P. O. BOX 1079 SACRAMENTO 5. CALIFORNIA Do Not Fill In State Well No. WATER WELL DRILLERS REPOR Other Well No. 7877, 7878, Water Cad Region 8540 (1) Driller: (cbeck): (3) Equipment used ed use or uses Name.... Municipal (cbeck): X mestoc Address..... Industrial Rotary Irrigation Test well Cable X Domestic and License No. 16.336 Classification Dug well Irrigation Other. Other..... Owne 4) Type of work (cbeck): Name. Addre New well Reconditioning of well Deepening existing well 🔀 2 (5) Well log: .....ft. Give details of formations penetrated, such as silt, peat, muck, sand, gravel, clay, shale, sand-Total depth of well... stone, hardpan, rock. Include size of gravel (diameter) and sand (fine, medium, coarse), color Depth From Ground Surface of material, structure (loose, packed, cemented, soft, hard, brittle). 11as .....ft. to... ium gratte ,, ,, ,, ,, ,, OCX ,, 20 ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, If additional space is required, continue on DWR Form No. 246-Supplement, and attach to respective report copies.

LENGTH FT. 44		Single Double welded.	LAS PER FOOT OR GAGE OF CASE	GROUND SUTTACE IT
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	<b>-</b>			

REGIONAL WATER POLLUTION CONTROL BOARD COPY

23971 3-50 40M QUIN

	WATER	WELL DRILL (Sections 7076, 7077, 7078, W		Do Not Fill In State Well No. Other Well No. Region
(7)	Perforations:		Q. C.	
,	Type of perforator use	Burnt	44 it. Hole size	3 10 Rest
L	Perforated			No. of holes
	53	÷** *3	•••••	,, ,, ,, ,,
	<b>,</b> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		·· ·· ··	,, ,, ,,
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	· · · · · · · · · · · · · · · · · · ·		······································	
(8)	Water levels:		(9) Well pumping test:	
	Depth at which water		Date of test	thom Water Bailer
	first encountered	<b>25</b> ft.	Depth to vater when test sta	rted 2,5
	Depth to water		G.P.M. at beginning of test.	
	before perforating		Drawdown from standing le	
	Depth to water		G.P.M. at completion of test	//- /
	after perforating		Drawdown at completion of	
	Note any change in wat	ter level while drilling	Length of time tested	45 MC
		PH-	Temperature of water	() d
		M17	Was gas present in water?	] Yes 🕱 No
8	4	<b>J</b> A		
¥-	W/		of weath T	
			of rockT	hickness of pack
	Was a surface sanitary	seal provided?	······	
	Was a surface sanitary Were any strata sealed	seal provided?	X No If yes, attach detailed descrip	tion()
	Was a surface sanitary Were any strata sealed Strata sealed	sezi provided? against pollution?	No If yes, attach detailed descrip	
	Was a surface sanitary Were any strata sealed Strata sealed Was analysis made of w	seal provided? against pollution? [] Yes ater? [] Yes 🔀 No If y	No If yes, attach detailed descrip	tion()
	Was a surface sanitary Were any strata sealed Strata sealed Was analysis made of w Was electric log made of	seal provided? against pollution?   Yes ater?   Yes   No If y well?   Yes   No If y	No If yes, attach detailed descrip es, attach copy. es, attach copy.	tion action 7076, Water
i V V	Was a surface sanitary Were any strata sealed Strata sealed Was analysis made of w Was electric log made of If well abandoned, was	seal provided? against pollution?   Yes ater?   Yes   No If y well?   Yes   No If y	No If yes, attach detailed descrip es, attach copy. es, attach copy.	tion action 7076, Water
	Was a surface sanitary Were any strata sealed Strata sealed Was analysis made of w Was electric log made of If well abandoned, was Method of plugging an	seal provided? against pollution?   Yes ater?   Yes   No If y well?   Yes   No If y :: plugged and sealed?	No If yes, attach detailed descrip es, attach copy. es, attach copy.	tion Dection 7076 P. N. J. I. A. Water C.
	Was a surface sanitary Were any strata sealed Strata sealed Was analysis made of w Was electric log made of If well abandoned, was Method of plugging ar- Location:	seal provided? against pollution? [Yes] ater? [Yes] No If y well? Yes No If y replugged and sealed? d sealing.	No If yes, attach detailed decrip es, attach copy. es, attach copy. (12) Time of work:	tion detion 7076. Water C
	Was a surface sanitary Were any strata sealed Strata sealed Was analysis made of w Was electric log made of If well abandoned, was Method of plugging an	seal provided? against pollution? TYes ater? Yes No If y well? Yes No If y t plugged and sealed? d sealing.	No If yes, attach detailed decrip es, attach copy. es, attach copy. (12) Time of work: Work started da	tion Ction 7076 N F I A Water C te July 8 Completed date July
	Was a surface sanitary Were any strata sealed Strata sealed Was analysis made of w Was electric log made of If well abandoned, was Method of plugging ar- Location:	seal provided? against pollution? Tyes ater? Yes No If y well? Yes No If y tr plugged and sealed? d sealing. Section No Township.	No If yes, attach detailed decrip es, attach copy. es, attach copy. (12) Time of work:	tion Ction 7076 N F I A Water C te July 8 Completed date July
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	Was a surface sanitary Were any strata sealed Strata sealed Was analysis made of w Was electric log made of If well abandoned, was Method of plugging ar- Location:	seal provided? against pollution? [Yes] ater? [Yes] No If y well? Yes] No If y tr plugged and sealed? d sealing. Section No	(12) Time of work: (12) Time of work: Work started da Date of this rep (12) WELL DRILLE well in Sec- This well well well well well well well wel	tion Ction 7076 N T I A Water C te Way Scompleted date Wy ST 29 14 R'S STATEMENT: as drilled under my jurisdiction and the best of my knowledge and belief.
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REGIONAL WATER POLLUTION CONTROL BOARD COPY

23972 3-50 40M 20:N SPO

Here i Here i

STATE OF CALIFORNIA DEPARTMENT OF PUBLIC WORKS DIVISION OF WATER RESOURCES	SHEET 1
L DRILLERS REPORT	Do Not Fill In State Well No. Other Well No. Region
940 ingite	uses cbeck : (3) Equipment used Munstipal (cbeck): Industrial Rotary
institution X Cther	Test well Cable X Dug well C Other
New weit 🔀	Reconditioning of well
	DEPARTMENT OF PUBLIC WORKS DIVISION OF WATER RESOURCES L DRILLERS REPORT

Well log: Total depth of well  $\mathcal{U}$  8 ft.

Depth From Ground Surface

Give details of formations penetrated, such as silt, peat, muck, sand, gravel, clay, shale, sandstone, hardpan, rock. Include size of gravel (diameter) and sand (fine, medium, coarse), color of material, structure (loose, packed, cemented, soft, hard, brittle).

<u> </u>	ft.	to	ft.	- WH HOLL
4	,,	<u>" 316</u>	"	Tight Clay some grake to mater
3/6	,,	<u>~ 45</u>	· ,,	Stranger Water house
<b>V</b>	,,	,, /•	····	Trans Witch Some Clay Coning Utal
45	"	<u>~ 48</u>	,, <b>(</b>	tight RILLE CLAY TRAVE & GRASHY
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		<i>"</i>		

If additional space is required, continue on DWR Form No. 246-Supplement, and attach to respective report copies.

(6)	Casing left in w	ell:			
	LENGTH FT. 48	DIAMETER INCHES	single double welded.	LBS. PER FOOT OR GAGE OF CASING	SEATING BELOW GROUND SURFACE FT
					······
/	Type and size of s	shoe or well ring 4X	Welded joints-Yes 🗌 No		
D.W.F	. Form No. 246	REGIO	NAL WATER POLLUTION CONTROL BOA	RD COPY	23971 3-5

	H OF WATER RESOURCES			Sheet 2
		VELL DRILLE		Do Not Fill In State Well No.
(7)	Perforations: Type of pertorater used,	Burnt A	holes	- Con Pa
	Perforated C			Na of boles 15 Perft.
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	», »,	······································	11         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1	••• ••• ••• ••• ••••••••••••••••••••••
				· · · · · · · · · · · · · · · · · · ·
(8)	Water levels:		(9) Well pumping test:	
	Depth at which water	21	Date of test May 30 By who	m Bailer lest
	first encountered	<b>36</b> ft.	Depth to water when test starte	d
	Depth to water before perforating	ft	G.P.M. at beginning of test Drawdown from standing level	
	Depth to water		G.P.M. at completion of test	15
	after perforating		Drawdown at completion of tes	st
	Note any change in water		Length of time tested	· 2 / 1V J.
	TVU		Temperature of water	V C.
			-	-
-	General:	71 -	Was gas present in water?	-
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wa If well abandoned, was it	The Size of Si	Was gas present in water?	Yes X No kness of pack
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wa If well abandoned, was it p Method of plugging and s Location:	The Size of provided? C. La Size of inst pollution? I Yes The second sec	Was gas present in water?	Yes X No kness of pack
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wate If well abandoned, was it Method of plugging and s	The Size of provided? provided? inst pollution? Yes No If yes, plugged and sealed? ealing Section No. 32	Was gas present in water?	Kness of pack n. Mays Rompleted dat May 30
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wa If well abandoned, was it p Method of plugging and s Location:	Size of provided? inst pollution? C. inst pollution? Yes r? Yes No If yes, cell? Yes No If yes, plugged and sealed? cealing Section No. Township Range	Was gas present in water?	Kness of pack n. Mays29 completed dat May 30
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wa If well abandoned, was it p Method of plugging and s Location:	Size of provided? inst pollution? Yes No If yes, cll? Yes No If yes, plugged and sealed? ealing Section No. Township Range Base & Meridian	Was gas present in water?	Kness of pack
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wa If well abandoned, was it p Method of plugging and s Location:	Size of provided? inst pollution? Yes No If yes, plugged and sealed? ealing Section No. Township Range Base & Meridian	Was gas present in water?	Kness of pack n. My Completed date S STATEMENT: drilled under my jurisdiction and this
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wate If well abandoned, was it Method of plugging and s Location: North	Size of provided? inst pollution? Yes No If yes, cll? Yes No If yes, plugged and sealed? ealing Section No. Township Range Base & Meridian	Was gas present in water? rock Thic Pochece Thic No If yes, attach detailed description attach copy. attach copy. (12) Time of work: Work started dated Date of this report Mell DRILLER'S report is true to the	Kness of pack
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wate If well abandoned, was it Method of plugging and s Location: North	Size of provided? inst pollution? Yes r? Yes No If yes, plugged and sealed? ealing Section No. Township Range Base & Meridian Show location of we tion, thus (X) Distances to section well. Nor X	Was gas present in water? Thic rock Thic No If yes, attach detailed description attach copy. attach copy. (12) Time of work: Work started dated Date of this report MELL DRILLER'S WELL DRILLER'S WELL DRILLER'S This well was report is true to the bines from OS ft. [SECNED]	Kness of pack n. My Completed date S STATEMENT: drilled under my jurisdiction and this
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wate If well abandoned, was it Method of plugging and s Location: North	Section No. Township Range Base & Meridian Show location of we tion, thus (X) Section X. Show location of we tion, thus (X) Stances to section well. N oc X. and E or X. 24	Was gas present in water? Thic rock Thic No If yes, attach detailed description attach copy. attach copy. (12) Time of work: Work started dated March 2000 March 2000 WELL DRILLER'S WELL DRILLER'S This well was report is true to the bines from OOO ft. SIGNED	Kness of pack n. My Completed date S STATEMENT: drilled under my jurisdiction and this
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wate If well abandoned, was it Method of plugging and s Location: North	Section No. 3 Section No. 3 Township. Range Base & Meridian 1 Show location of we and E or 2 how location of we Show location o	Was gas present in water? Thic rock Thic No If yes, attach detailed descriptio attach copy. attach copy. (12) Time of work: Work started dated March March Date of this report WELL DRILLER'S WELL DRILLER'S WELL DRILLER'S This well was report is true to the lines from OOO ft. I SIGNED	kness of pack n. Mays? Completed date Mays? Completed date S STATEMENT: drilled under my jurisdiction and this best of my knowledge and belief. Well Driver Well Driver May State May State
	General: Was well gravel packed? Was a surface sanitary seal Were any strata sealed aga Strata sealed Was analysis made of wate Was electric log made of wate If well abandoned, was it Method of plugging and s Location: North	Section No. Township Range Base & Meridian Show location of we tion, thus (X) Section X. Show location of we tion, thus (X) Stances to section well. N oc X. and E or X. 24	Was gas present in water? Thic rock Thic Poched Thic No If yes, attach detailed description attach copy. (12) Time of work: (12) Time of work: Work started dated Date of this report WELL DRILLER'S WELL DRILLER'S This well was report is true to the lines from OO ft. I sc NED St known	Kness of pack n. My Completed date S STATEMENT: drilled under my jurisdiction and this

OFICINAL Fridriginal, Duplicate and Trodicate units the NVISION OF WATER RESOURCES P. O. BOX 1079 SACRAMENTO S. CALIFORNIA	STATE OF CALIFORNIA DEPARTMENT OF PUBLIC WORKS DIVISION OF WATER RESOURCES Do Not Fill In
	L DRILLERS REPORT
(1) Driller: Name A. W. MIHOR Address 1727 Kagnol Redding, C License No. 116889 Ca	, -
Owner: Name Address	(4) Type of work cbeck : New weil T Reconditioning of well Deepening existing well
(5) Well log: Total depth of well 52 :: Depth From Ground Surface	stone. hardpan, rock. Include size of gravel (diameter) and sand (fine, medium, coarse), co of material, structure (loose, packed, cemented, soft, hard, brittle).
Total depth of well 52 :: Depth From Ground Surface 0 ft. to 16 ft 16 " " 21 ' 21 " " 29 ' 29 22" " 37 '' 37 " " 58 ''	stone. hardpan. rock. Include size of gravel (diameter) and sand (fine, medium, coarse), co of material, structure (loose, packed, cemented, soft, hard, brittle).
Total depth of well 52 :: Depth From Ground Surface 0 ft to 16 ft 16 " " 81 " 21 " 29 " 89 57 " 37 " " " 7 " 7 " " " " 7 " " " 7 " " " 7 " " " 7 " " " " 7 " " " " " " " " " " " " " " " " " " "	stone. hardpan. rock. Include size of gravel (diameter) and sand (fine, medium, coarse), co of material, structure (loose, packed, cemented, soft, hard, brittle). <b>Gravel-Ioam</b> loose <b>Clay</b> packed <b>Gravel 1<sup>st</sup>-Sand coarse</b> <b>Hardpan</b> comented <b>Gravel 1<sup>st</sup> to 11<sup>st</sup> Sand coarse</b>
Total depth of well 52 :: Depth From Ground Surface 0 ft to 16 ft 16 " " 21 ' 21 " " 29 ' 29 22 " 37 ' " " 29 '' " " " " " " " " " " " " " " " " " " "	stone. hardpan, rock. Include size of gravel (diameter) and sand (fine, medium, coarse), co of material, structure (loose, packed, cemented, soft, hard, brittle). <b>Gravel-Ioam</b> loose Clay packed Gravel ± <sup>n</sup> -Sand coarse Hardpan cemented Gravel ± <sup>n</sup> to 1½ <sup>n</sup> Sand coarse

If additional space is required, continue on DWR Form No. 246-Supplement, and attach to respective report copies.

(6) Casing left in well:

» »

» »

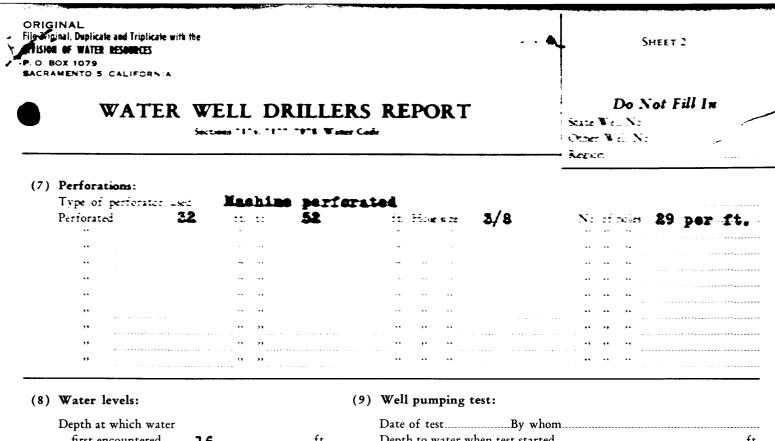
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,,

,,

LENGTH FT.	DIAMETER	SINGLE, DOUBLE, WELDED, OTHER	LBS. PER FOOT OR GAGE OF CASING	SEATING BELOW GROUND SURFACE, FT.
	<b>6</b> *	Single	18 gage	ground surface
<b>.</b>	·····•	~		• · · · · · · · ·
	•			
Type and size of s	shoe or well ring 5/	<b>8</b> Welded joints- <b>2</b> Yes 2 No		

REGIONAL WATER POLLUTION CONTROL BOARD COPY



Depen at which water	
first encountered	ft.
Depth to water	
before perforating	ft.
Depth to water	
after perforating9	ft.
Note any change in water level while drilling	

Date of testBy whom	
Depth to water when test startedf	
G.P.M. at beginning of test	
Drawdown from standing levelf	it.
G.P.M. at completion of test	
Drawdown at completion of testf	t.
Length of time tested	
Temperature of water	- ~ -
Was gas present in water? 🗌 Yes 🗌 No	

23972 3-50 40N 201N SPO

#### (10) General:

General:		$\frac{\underline{C} \ \underline{O} \ \underline{N} \ \underline{F} \ \underline{I} \ \underline{D} \ \underline{E} \ \underline{N} \ \underline{T} \ \underline{I} \ \underline{A} \ \underline{L}}$ Section 7076.1, Water Ende Thickness of pack
Was well gravel packed?	Size of rock	Thickness of pack
Was a surface sanitary seal provided?		
Were any strata sealed against pollution?	] Yes 🛨 No If yes, attac	ch detailed description.
Strata sealed		
Was analysis made of water? 🗌 Yes 😰 No		
Was electric log made of well? 🗌 Yes 📰 N		
Method of plugging and sealing		

(12) Time of work:

#### (11) Location:

Nortb	Section No. 58 Township	Work started datel0-9-50 Completed datel0-11-50 Date of this report 11-18-50
	Range Base & Meridian <b>It</b> • <b>Diablo</b> Show location of well in Sec- tion, thus (X) Distances to section lines from well, X or S <b>975</b> ft.	WELL DRILLER'S STATEMENT:         This well was dealed under my jurisdiction and this         report is true to the best of my knowledge and belief.         [SMCNED]
OX 1 MILE	and f or <b>V</b> 1025 ft. Show location of nearest known well, thus (O) Distance to nearest known well 180 ft.	By 116889 Classification C 57 License No. Classification C 57 Dated Lov. 18, 19 50

REGIONAL WATER POLLUTION CONTROL BOARD COPY

32N/05W-32M

	/
STATE OF CALIFORNIA	
THE RESOURCES AGENCY	
DEPARTMENT OF WATER RESOURCES	

Do not fill in

No. 349624

Se of Intent No.	060-06 State Well No
Local Permit No. or Date	Other Well No.
(1	(12) WELL LOG: Total depth 262 ft. Completed depth 262 ft.
Ac	from ft. to ft. Formation (Describe by color, character, size or material)
Ci	0 - 34 weathand green stone
(2) LOCATION OF WELL (See instructions):	- /
County Shaste Owner's Well Number	34 - 262 Fresh greenstone
Well address if different from above	
Township <u>32N</u> Range <u>Sw</u> Section <u>32</u>	
Distance from cities, roads, railroads, fences, etc3/10 mi. From	
Hwy 299 to drill sites	-
· · · · · · · · · · · · · · · · · · ·	
I Eron Mtn, Rd, N (3) TYPE OF WORK:	
I row Mtw, Rd. N New Well Deepening Beconstruction	
Reconstruction	
Reconditioning Horizontal Well	
Destruction (Describe	
destruction materials and p	
cedures in Item 12)	
(4) PROPOSED US	
Domestic	
Irrigation	A D ARD
Industrial Industrial	
House 3 10 Test Well	
Municipal	
Other	
WELL LOCATION SKETCH	
(5) EQUIPMENT:	
Rotary 🛛 Reverse 🗆 Ya 🗋 No 🎗 Size	
Cable Air 🔀 Prameter of bore	
Other D Bucket Rached from	$(\mathbb{P}^{(1)})^{\vee}$ -
(7) CASING INSTALLED: (8) PERPORATIONS: Amage	
(7) CASING INSTALLED:     (8) PERPORATIONS: NON       Steel     Plastic     Concrete       Type of performion or size of performion	,
	<u>&gt;</u>
From To Dia Gage or To Store To Size	
- 35 41 188	_
	- SEP (1 1990
(9) WELL SEAL:	
Was surface sanitary seal provided? Yes 🖬 No 🗌 If yes, to depth23	_ ft
Were strata sealed against pollution? Yes 🗌 No 🗌 Interval	_ ft
Method of sealing Dry Bentowite	Work started 8-21 19 90 Completed 8-21 19 90
(10) WATER LEVELS:	WELL DRILLER'S STATEMENT: 4.57
Depth of first water, if known	- ft. This well was drilled under my jurisdiction and this report is true to the
Standing level after well completion 84	- ft. best of my knowledge and belief.
(11) WELL TESTS:	Signed Don Helelen
Was well test made? Yes 🕱 No 🗌 If yes, by whom? <u>US</u>	
Twee of test Pump Bailer Air lift Air lift to water at start of test 4 ft. At end of test 250	ft. Rt. 2Pe Restin 7 (gapporation) (Typed or printed)
Discharge gal/min after hours Water temperature	Address Address SHINGLETOWN, CA 96088
Chemical analysis made? Yes No 🕱 If yes, by whom?	City (916) 474-5300 ZIP
Was electric log made Yes 🗌 No 🙀 If yes, attach copy to this report	License No. 279177 Date of this report 8-22-90

WATER WELL DRILLERS REPORT

ORIGINAL

File with DWR

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

	ith DWR					F	RÉ	CEIN		COM	OF CALI PLET	ΙΟ	)N	REPO	RТ		32N	10	51	<u>1 – 11</u>	OT FILL IN
Owner's Date W	of s Well No ork Began _		2 30 5	- 4	82		, Er		N R	N-1-92				)74						1	
	Permit Age rmit No	102				2			nit I	Date	9-23	3-	90	∽,	.,			I I	APN/TR	S/OTH	R
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DEP	TH FROM JRFACE	DEPTH				D	ESC	_ <u>25</u> _(F Criptio	N		<b>IFACE</b>		JII Y								
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36	258	green Khyolite with quartz																·			
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									-					)		<u>ج</u>	ine 4				
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		 										┨		(		E 1	Beker	\$ 1111			Under"GEOLOGICLOG") ANNED USE(S)-
		   										WEST	2	1		100			EAST		( <u>८</u> ) MONITORING
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	-	 										-									Public
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	1												METH	- WATE	R I	LEVEL	& YIELD	OF C	OMP	LETE	D WELL
												_ ₽	DEPT	R LEVEL		36		ате ме	ASURE	D	10-1-92
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Ft.	to Ft.	(inches)	BLANK	SCRE	CON- DICTOR	FILF		GRADE		(Inches)	THICKN	IESS		(Inches)		Ft.	to Ft.	MENT ( <u>ビ</u> )	TONITE (ビ)	FILL (二)	(TYPE/SIZE)
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	— ATTACH		( -	∠)					iders	signed, ce	rtify that				nple	ete and a	ATEMEN courate to t		st of m	y knov	vledge and belief. $457$
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DWR	188	REV.	7-90

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<sup>00</sup> IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL File with DWR	RECEIVE	DWELL COMP	DF CALIF	ornia ON REPOR'	T 32M 15 W- 32M	]
Page of	SEP 09 154	Kejer to Ins	struction	Pamphlet		
Owner's Well No		nded <u>\$-23-94</u>	<sup>.</sup> 58	1564		
Date Work Began - Local Permit Age		nded $\frac{1}{2}$ $\frac{1}{7}$ $\frac{1}{7}$	<u> </u>			$\neg$
Permit No.	10936	Permit Date	8-25	5-94	APN/TRS/OTHER	
	GEOLOGIC L				WELL OWNER	
ORIENTATION (∠)		ONTAL ANGLE (S	PECIFY)			
DEPTH FROM	DEPTH TO FIRST WATER	R(Ft.) BELOW SURI	FACE			
SURFACE		CRIPTION				
Ft. to Ft. 262 498		ial, grain size, color, etc. Fe with guzy	ta	× 11	WELL LOCATION	
ARA TIV		0-498		Address City		-
1			1	County	shast 2	
				Township 32	24 Page <u>060</u> Parcel <u>06</u> N Range <u>050</u> Section <u>32 M</u>	
	L			Latitude		EST
<u> </u>					CATION SKETCH — ACTIVITY (- )	) –
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				F	DESTROY (Describe Procedures and Mate	riala
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				32N/50	ん・うてつ 「 Industrial	
					"TEST WELL"	
					SOUTH CATHODIC PROT	
		-		such as Roads. Bui	ibe Distance of Well from Landmarks OTHER (Specify)	
				PLEASE BE ACC	CURĂTE & COMPLETE.	
				DRILLING	IV Rotzny FLUID water	
				WATER	LEVEL & YIELD OF COMPLETED WELL	
				DEPTH OF STATIC WATER LEVEL	(Ft.) & DATE MEASURED	
	A D 01			,	• (GPM) & TEST TYPE (GPM) & TEST TYPE	—[
TOTAL DEPTH OF	BORING <u>498</u> (Feet)	98			(Hrs.) TOTAL DRAWDOWN (Ft.)	
TOTAL DEPTH OF O	COMPLETED WELL4	<b>1 0</b> (Feet)		* May not be repre	sentative of a well's long-term yield.	
DEPTH	BORE-	CASING(S)			DEPTH ANNULAR MATERIAL	
FROM SURFACE	HOLE TYPE ( )		GAUGE	SLOT SIZE	FROM SURFACE TYPE	_
Ft. to Ft.	DIAN SCREEN CON- DUCTOR FILL PIPE	MATERIAL/ DIAMETER GRADE (Inches)	OR WAL	L IFANY	Ft. to Ft. MENT TONITE FILL (TYPE/SIZE)	
None 200					NON'S added -	
l l					SPD 2 1 1994	
ATTACH	IMENTS (∠)		416. , AL + -1		TION STATEMENT	
Geologic	Log				lete and accurate to the best of my knowledge and belie	я. <b> </b>
	struction Diagram	NAME (PERSON, FIRM, OR CO	DRPORATION)	(TYPED OR PRINTED)	<u>117</u>	
	ical Log(s) er Chemical Analyses		miNO		Shinglatown Cor 96088	~
Soli/ wat		ADDRESS	1	0.0	CITY STATE ZIP	-1
1	INFORMATION. IF IT EXISTS.	Signed Lon	He	they	<u>8-25-94</u> DATE SIGNED C-57 LICENSE NUMBI	
		WELL DRILLER/AUTHOR	RIZED REPRES	SENTATIVE	DATE SIGNED C-57 LICENSE NUMB	ER

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IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL File with DWR Page of Owner's Well No. Date Work Began Local Permit Age Permit No.	DEC 0 7 2015 WELL CO <i>Refe</i> mey SHASTA County	er to Instruction Par No. 098	N REPORT	3	2N/05	
ORIENTATION (⊻) DEPTH FROM SURFACE Ft. to Ft.	VERTICAL HORIZONTAL ANGL DRILLING AR ROTARY METHOD DESCRIPTION Describe material, grain size, col	lor, etc.		WELL LOC	ATION-	
0 3 3 22 20 35 35 405	Soil + Bolders Brown Stak FRACTURED BROWN RO GROEN GRANIT		City County APN Book 204 Fownship Lat I LOCAT	<u>Keoding</u> HAS A Page <u>040</u> P Range S	arcel	<u>i i w</u> <u>ACTIVITY</u> (∠) <u>ACTIVITY</u> (∠)
W 40 205 348 348		MEST	Draveurat	Y	EAST	MODIFICATION/REPAIR Deepen Other (Specify) DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG") USES ( $\leq$ ) WATER SUPPLY Domestic Public Irrigation Industrial TEST WELL CATHODIC PROTECTION HEAT EXCHANGE
			Illustrate or Describe Dist Fences, Rivers, etc. and at necessary. PLEASE BE A WATER L	EVEL & YIELD O	ETE. DF COMPLI	
TOTAL DEPTH OF E	1100		DEPTH TO FIRST WATE DEPTH OF STATIC WATER LEVEL ESTIMATED YIELD * TEST LENGTH * May not be represent	(Ft.) & DATE M (GPM) & TE (Hrs.) TOTAL DRAWDO	MEASURED	10-7-15 AIR LI'FF
DEPTH FROM SURFACE Ft. to Ft. 0 38 30 405 5 405 345 405	BORE- HOLE DIA. (inches) $X$	NG (S) TERNAL AMETER Inches) AMETER OR WALL THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS AMEDIA THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKNESS THICKN	SLOT SIZE	Et to Et I	ANNU CE- BEN- TONITE ( $\leq$ ) ( $\leq$ )	JLAR MATERIAL TYPE FILL FILTER PACK (⊥)
Geologic Well Cons Geophysi Soil/Wate Other	Log struction Diagram cal Log(s) r Chemical Analyses UEORMATION IE IT EXISTS Signed	Ined, certify that this WEN FOR IRM, OR CORPORATION, (T IRM, OR CORP	report is complete ar YPED OR PRINTED) DC RD	DRIlling ANDERSC	est of my kn	owledge and belief.

OSP 03 78836

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL       WIV 0 7 2014       STATE OF CALLE         File with DWR       WELL       COMPLETIE         Page of       Owner's Well No.       Image: Complete to Instruction         Owner's Well No.       Image: Complete to Instruction       No.       09         Date Work Began       Ended       9-25-14       Image: Complete to Instruction         Local Permit Agency       Ended       9-25-14       Image: Complete to Instruction         Permit No.       Image: Complete to Instruction       Image: Complete to Instruction       Image: Complete to Instruction         Complete to Instruction       Image: Complete to Imag	ON REPORT     STATE WELL NO./STATION NO.       88555     Image: Construction of the state o
ORIENTATION ( $\leq$ )       Xvertical	Off Tilton Mine Road, Lower Springs         Address
ТОТАL DEPTH OF BORING	LSUB       DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")         VIEW       VIEW         VIEW
TOTAL DEPTH OF COMPLETED WELL	* May not be representative of a well's long-term yield.         Certain State       DEPTH FROM SURFACE       ANNULAR MATERIAL TYPE         SLOT SIZE IF ANY (Inches)       FL to FL       CE- MENT TONITE ((±) (±)       FILL FILL (TYPE/SIZE)         Cortes       FL to FL       (±) (±)       FILL (TYPE/SIZE)         Cortes       FL to FL       (±) (±)         Cortes       FL to

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL File with DWR SEP 7 4 2	STATE OF CALIF		DWR USE ONLY -	DO NOT FILL IN
Page of	Refer to Instruction	Pamphlet	STATE WELL N	O./STATION NO.
	No. 091	88559		
Date Work Began	, Ended			LONGITUDE
Local Permit Agency	esta Co	<u> </u>	APN/TRS	/OTHER
Permit No.	Permit Date 7-9-15			·····
DRILLING METHOD	RROTARY FLUID	Victoria	Highlands	
SURFACE Duranti	<b>DESCRIPTION</b> De material, grain size, color, etc.			
Ft. lo Ft. Descrit		Address 5	Well LOCATION-	
		City		
Q Q Sol		County	st/1	
20 27 0.00	v + White Corawit	APN Book	Page <b>_&amp;&amp;O</b> _ Parcel _ <b>@</b> Range <u>DSW</u> _Section	2
225 20 GREEN	G2ANIT	E of	I N Long	W I
270 285 504	White GRANIT.	DEG. MIN.	SEC. D	EG. MIN. SEC. T— ACTIVITY (∠) —
25 330 50++	OREN GRANIT		NORTH	NEW WELL
35 385 5240	V GRANIT Speens White GRANIT	-		MODIFICATION/REPAIR Deepen
385 426 Cheen	GRANIT		) í	Other (Specify)
		House @n	المعر	DESTROY (Describe
250		- Row		Procedures and Materials Under "GEOLOGIC LOG")
185				USES ( 🗹 ) WATER SUPPLY
275		-		A Domestic Public Public Irrigation Irrigation
i i		WEST	EAST	MONITORING
				TEST WELL
		-	1	HEAT EXCHANGE
			1	DIRECT PUSH INJECTION
		TOORIN M	plands Da	VAPOR EXTRACTION
				SPARGING REMEDIATION
		<ul> <li>Illustrate or Describe Distant Fences, Rivers, etc. and atta necession PLFASE RF AC</li> </ul>	ice of Well from Roads, Buildings, wh a map. Use additional paper if CURATE & COMPLETE.	OTHER (SPECIFY)
			VEL & YIELD OF COMPI	ETED WELL
		DEPTH TO FIRST WATER	(Ft.) BELOW SURFAC	
		DEPTH OF STATIC	'n	8-11-14
		- WATER LEVEL	(Ft.) & DATE MEASURED _ (GPM) & TEST TYPE	JUZLIFY
TOTAL DEPTH OF BORING		TEST LENGTH	(Hrs.) TOTAL DRAWDOWN	•
TOTAL DEPTH OF COMPLETED WE	LL, <b>fol(z</b> (Feet)	* May not be representa	tive of a well's long-term yield.	
DEPTH BORE-	CASING (S)			ULAR MATERIAL
HOLE   TYPE	. 또 문 MATERIAL / INTERNAL GAUGI		ROM SURFACE CE- BEN-	TYPE
Ft. to Ft.	BUD BOD CO CO CO CO CO CO CO CO CO CO CO CO CO	LL IF ANY	Et to Et MENT TONITI	I (TYPE/SIZE) I
0 29 10" X	Steel 6" 134		$)  22  (\underline{\times})  (\underline{\times})$	(≚)
29 426 6"		Cento		
6 426 -	PUC 4" Stig	le lec		
346 430 X	PUC 4" Schi	<u> 032</u>	1 t	
373 400 N	FActo	ALL PRET.		
ATTACHMENTS ( $\leq$ )		CERTIFICATION		· · · · · · · · ·
Geologic Log	I, the undersigned, certify that t	inis teport is complete and	accurate to the best of my k	nowledge and belief.
Well Construction Diagram	NAME (PERSON, FIRM, OR CORPORATION)	(TYPED OR PRINTED)	· MARILING	
Geophysical Log(s)	1021 EASTS	ine Ro A	NIDERSON CA	96007
Other	ADDRESS Calores	7-f-	CITY	STATE ZIP
ATTACH ADDITIONAL INFORMATION, IF IT	EXISTS. Signed C-57 LICENSED WATER WELL CON	Tes UN	DATE_SIGNED	
DWR 158 REV. 05-03	ADDITIONAL SPACE IS NEEDED, USE NE	XT CONSECUTIVELY NUN	ABERED FORM	OSP 03 78836

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

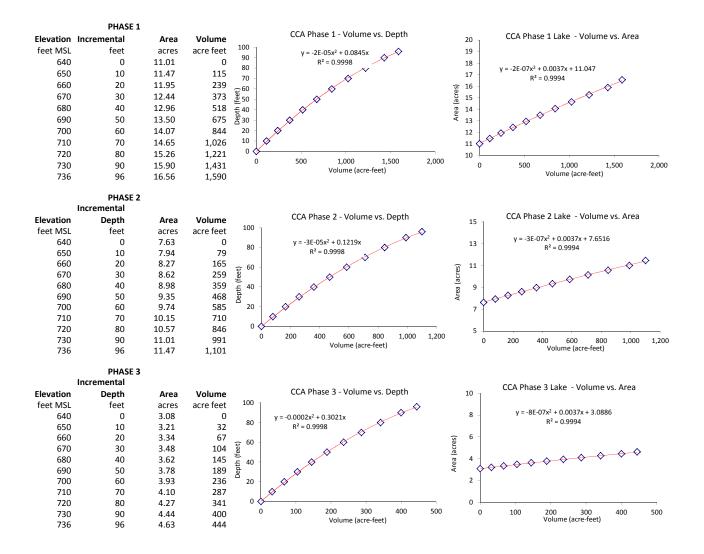
#### State of California Well Completion Report Form DWR 188 Complete 1/21/2016 WCR2016-000426

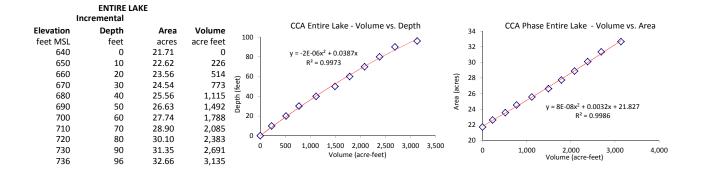
Owner's Well Numb	er WW-1		Date Work Began	ork Began 12/14/2015 Date Work Ended				12/15/2015			
Local Permit Agenc	y Shasta Co	ounty Environmental H	ealth								
Secondary Permit A	.gency		Permit Number	WTR15-22	Э		Permit Dat	e 11/24/2015			
Well Owner (	must rema	ain confidential	pursuant to Wate	r Code 13	752)	Pla	nned Us	e and Activity			
Name XXXXXXX	(XXXXXXXXXXXX	<xxx< td=""><td></td><td></td><td></td><td>Activity I</td><td>Drill and Des</td><td>stroy</td></xxx<>				Activity I	Drill and Des	stroy			
Mailing Address	XXXXXXXXXX	xxxxxxxxxxx				– Planned Use	e Destru	uction			
	XXXXXXXXX	xxxxxxxxxxx									
City XXXXXXXX	xxxxxxxxxx	xx	State XX	Zip XXX	XX						
			Well Loca	ation							
Address 100 Ne	w Found WAY				APN	204-660	000-800-				
City Redding		Zip 960	02 County Shas	ta	Том	nship 32	Ν				
Latitude 40	35	·	gitude -122 27		V Ran	ige 05 W					
Deg.		Sec.	Deg. Min.	Sec.	Sec						
Dec. Lat. 40.5873			Long122.4559088	000.		eline Meridiar					
Vertical Datum	5312		°			und Surface E	-	729			
Vertical Datum       Horizontal Datum       WGS84       Elevation Accuracy       30 Ft         Location Accuracy       Location Determination Method       Elevation Determination Method       Elevation Determination Method       GPS with WAAS											
Borehole Information Water Level and Yield of Completed Well											
Orientation Verti											
Drilling Method D	Drilling Method Downhole Rotary Drilling Fluid Air										
<u> </u>	ammer			Water Level	- I*	(Fee	,	leasured			
Total Dopth of Paris	ng 486		Feet	Estimated Yie Test Length	Id."	(GPI (Hou	,	ype Drawdown (feet)			
Total Depth of Borin Total Depth of Corr	-		Feet	*May not be re	epresent		,				
			reet					<b>,</b>			
			Geologic Log -	Free Form	n						
Depth from Surface Feet to Feet				Description							
0 2	Reddish brow	n silty clay									
2 8	Lt. brown silty	clay									
8 25	Lt. brown wea	thered greenstone									
25 486 Greenstone											
	Casings										
			Casing	,0							
Casing # Depth from Feet to	Surface Feet Casir	ng Type Material	Casing Casings Specificatons	Wall	Outsid Diamet (inches	er Screen	Slot Size if any (inches)	Description			
Casing Bepth from Feet to	Surface Casir	ng Type Material		Wall Thickness	Diamet	er Screen	if any	Description			
Casing Depth from # Feet to	Surface Casir Feet	ng Type Material		Wall Thickness (inches)	Diamet	er Screen	if any	Description			
Casing # Depth from Feet to Depth from Surface Feet to Feet	Surface Feet Casir Fill		Casings Specificatons	Wall Thickness (inches)	Diamet (inches	er Screen	if any	Description			

Other Observations:

B	Borehole Specifications		Certifie	cation \$	Statement		
Depth from Surface Feet to Feet	Borehole Diameter (inches)	I, the under Name		MOND CO	curate to the best of m RE DRILLING IN		and belief
		Person, Firm or Corporation P O BOX 491925 REDDING CA Address City State					
		Signed	electronic signature re C-57 Licensed Water Well (	01/18/2016 512406 Date Signed C-57 License Nur			
	Attachments	][	DV	NR Use	e Only		
Cory McCandliss	Well Site.pdf - Location Map	CSG #	State Well Number	S	ite Code	Local Well Number	
		La TRS: APN:	Intitude Deg/Min/Sec	<u> </u>	Longitude	Deg/Mi	w n/Sec

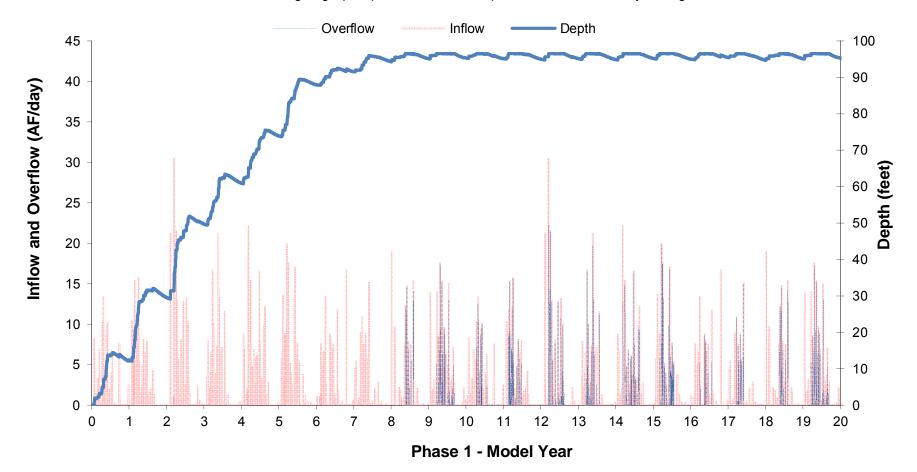
APPENDIX C New Lake & Phase Characteristics

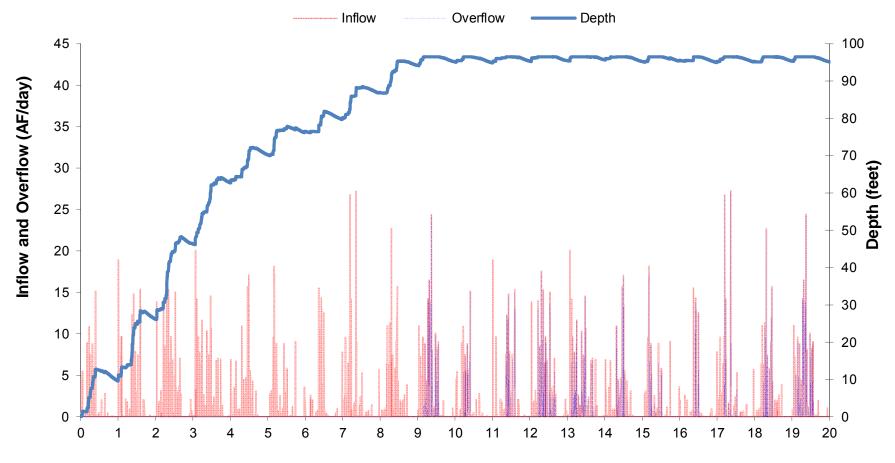




APPENDIX D WATER-BUDGET MODELING OUTPUT GRAPHS Crystal Creek Aggregate - New Lake - Phase 1 Average Rainfall Period (Based on 2001 - 2011

60.8" annual avgerage precip., 49.2" annual evaporation, 0.0003 feet/day leakage





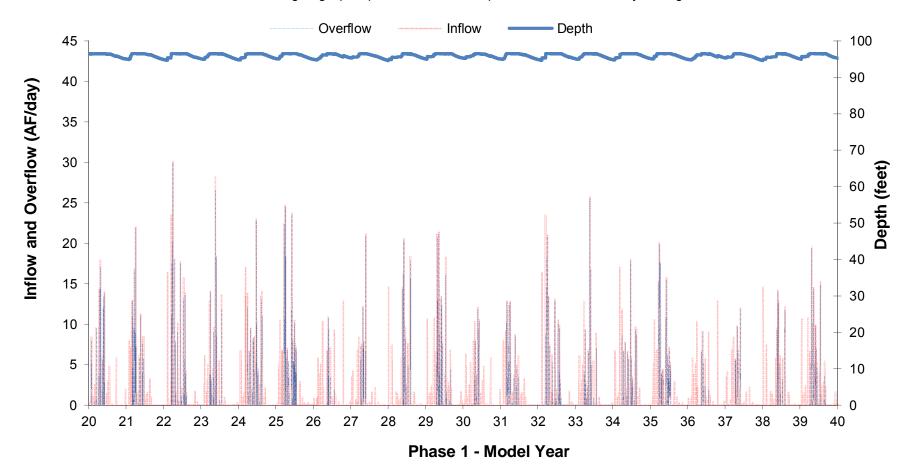
44.17" annual average dry period precipitation, 49.2" annual evaporation, 0.0003 feet/day leakage

Crystal Creek Aggregate - New Lake - Phase 1 Drought Period (Based on 2007 - 2017 Precipitation)

Phase 1 - Model Year

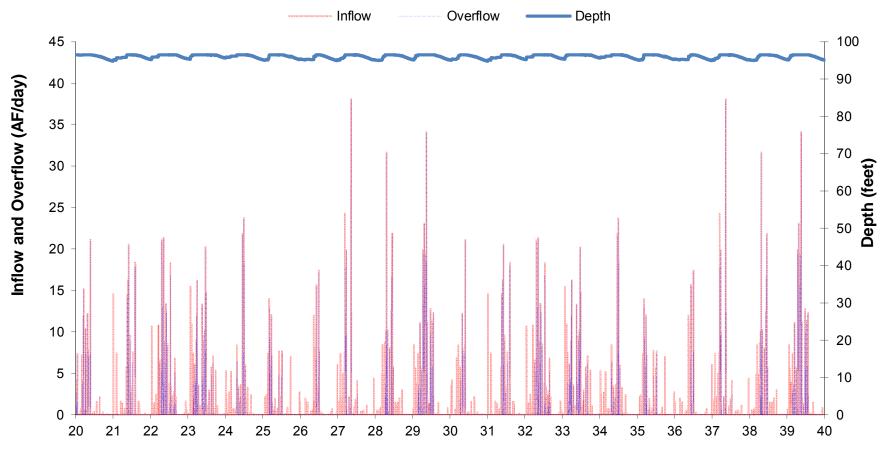
Crystal Creek Aggregate - New Lake - Phase 1 Average Rainfall Period (Based on 2001 - 2011

60.8" annual avgerage precip., 49.2" annual evaporation, 0.0003 feet/day leakage



44.17" annual average dry period precipitation, 49.2" annual evaporation, 0.0003 feet/day leakage

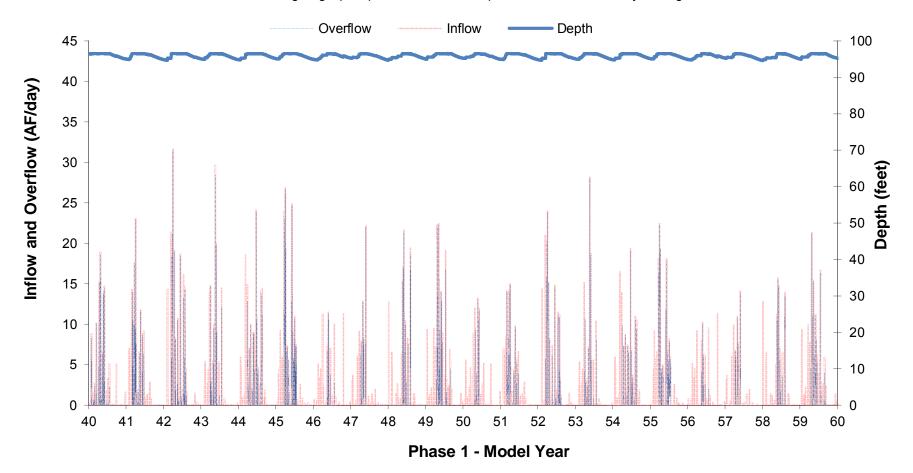
Crystal Creek Aggregate - New Lake - Phase 1 Drought Period (Based on 2007 - 2017 Precipitation)



Phase 1 - Model Year

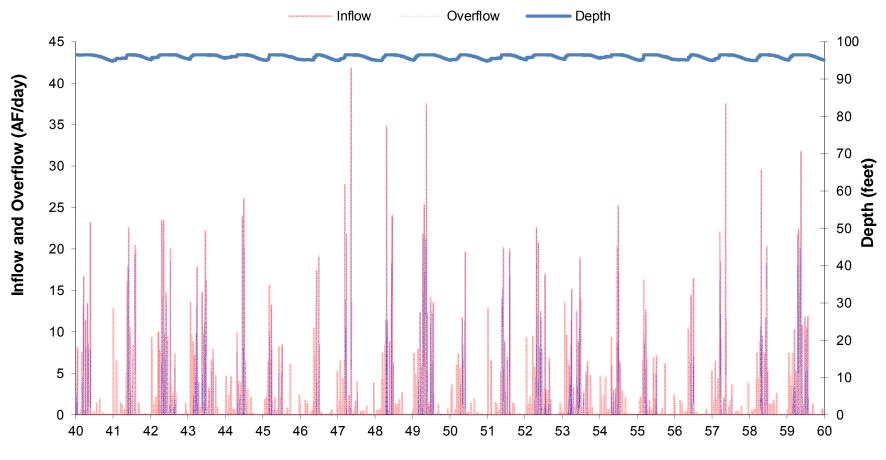
Crystal Creek Aggregate - New Lake - Phase 1 Average Rainfall Period (Based on 2001 - 2011

60.8" annual avgerage precip., 49.2" annual evaporation, 0.0003 feet/day leakage



44.17" annual average dry period precipitation, 49.2" annual evaporation, 0.0003 feet/day leakage

Crystal Creek Aggregate - New Lake - Phase 1 Drought Period (Based on 2007 - 2017 Precipitation)



Phase 1 - Model Year

Overflow Inflow Depth Inflow and Overflow (AF/day) Depth (feet) Phase 2 - Model Year

# Crystal Creek Aggregate - New Lake - Phase 2 Average Rainfall Period (Based on 2001 - 2011

60.8" annual avgerage precip., 49.2" annual evaporation, 0.0003 feet/day leakage

Overflow Inflow - Depth Inflow and Overflow (AF/day) Depth (feet) 

Crystal Creek Aggregate - New Lake - Phase 2 Drought Period (Based on 2007 - 2017 Precipitation)

44.17" annual average dry period precipitation, 49.2" annual evaporation, 0.0003 feet/day leakage

Phase 2 - Model Year

Overflow Inflow Depth Inflow and Overflow (AF/day) Depth (feet) Phase 2 - Model Year

# Crystal Creek Aggregate - New Lake - Phase 2 Average Rainfall Period (Based on 2001 - 2011

60.8" annual avgerage precip., 49.2" annual evaporation, 0.0003 feet/day leakage

Overflow Inflow - Depth Inflow and Overflow (AF/day) Depth (feet) 

Drought Period (Based on 2007 - 2017 Precipitation)

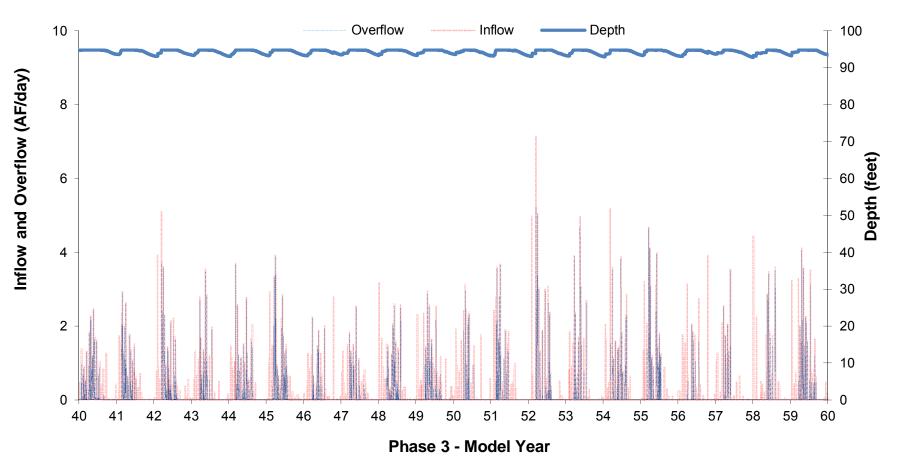
Crystal Creek Aggregate - New Lake - Phase 2

44.17" annual average dry period precipitation, 49.2" annual evaporation, 0.0003 feet/day leakage

Phase 2 - Model Year

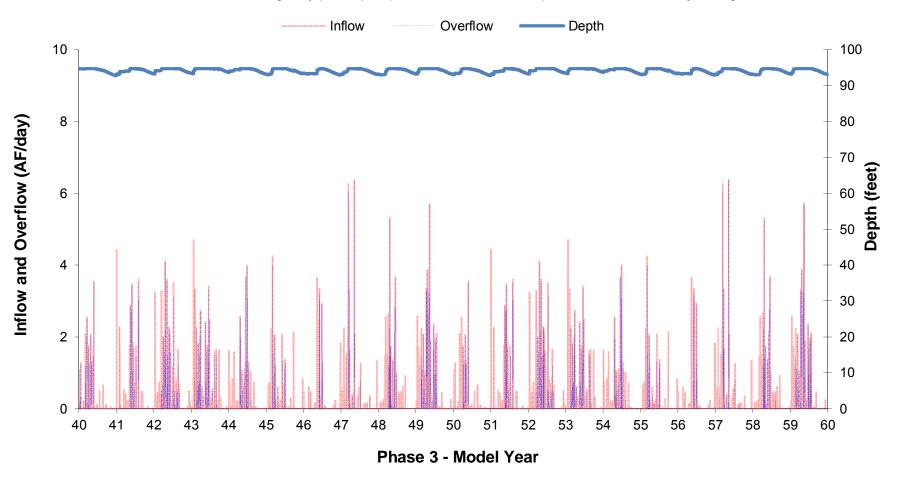
# Crystal Creek Aggregate - New Lake - Phase 3 Average Rainfall Period (Based on 2001 - 2011

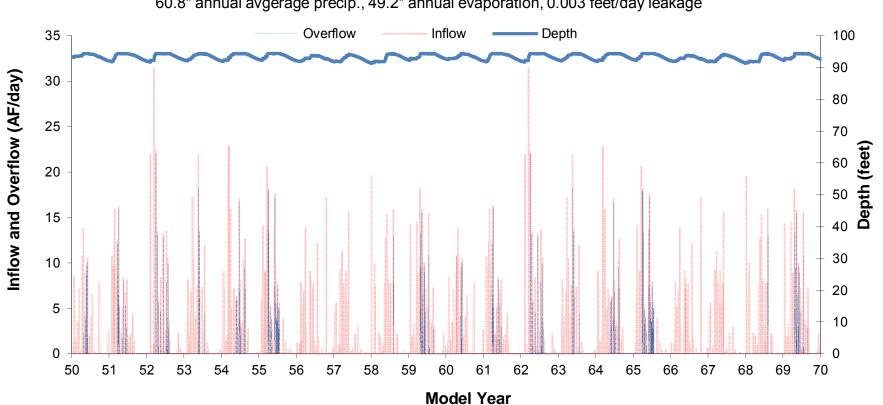
60.8" annual avgerage precip., 49.2" annual evaporation, 0.0003 feet/day leakage



44.17" annual average dry period precipitation, 49.2" annual evaporation, 0.0003 feet/day leakage

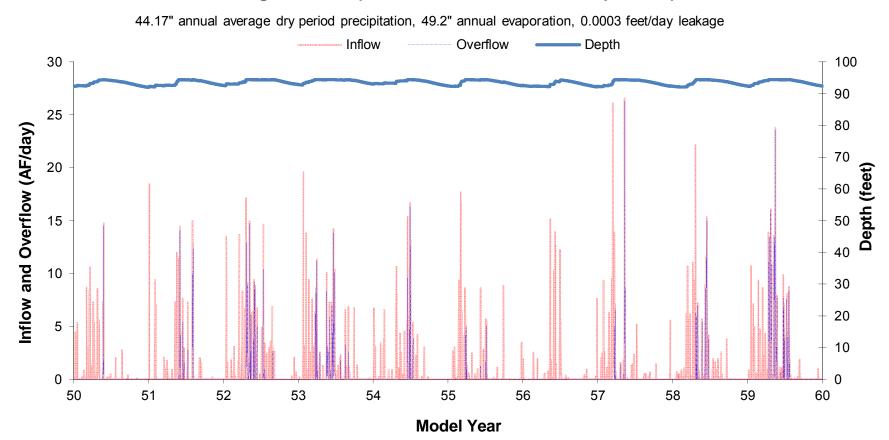
Crystal Creek Aggregate - New Lake - Phase 3 Drought Period (Based on 2007 - 2017 Precipitation)





### Crystal Creek Aggregate - New Lake - Entire Lake Average Rainfall Period (Based on 2001 - 2011 Precipitation)

60.8" annual avgerage precip., 49.2" annual evaporation, 0.003 feet/day leakage



# Crystal Creek Aggregate - New Lake - Entire Lake Drought Period (Based on 2007 - 2017 Precipitation)

APPENDIX E WATER-BUDGET MODELING ANNUAL SUMMARIES

### WATER BALANCE SUMMARY CLEAR CREEK AGGREGATE LAKE MODELING

Model Year	Direct Precip	Runoff	TOTAL INFLOW	Leakage	Evaporation	Overflow	TOTAL OUTFLOW	BALANCE	CHECK (STORAGE FROM MODEL)		
	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet		
									3099		
51	102	55	157	4	156	17	177	3079	3079		
52	161	87	249	4	156	59	219	3109	3109		
53	210	113	323	4	156	149	309	3123	3123		
54	203	110	313	4	157	145	305	3130	3130		
55	128	69	197	4	156	65	225	3102	3102		
56	121	65	186	4	156	21	181	3107	3107		
57	96	52	147	4	156	0	159	3095	3095		
58	146	79	226	4	156	64	224	3096	3096		
59	177	96	273	4	156	110	270	3099	3099		
60	250	135	385	4	156	225	385	3099	3099		

# ENTIRE LAKE - DRY PERIOD - YEARS 51 - 60

# ENTIRE LAKE - AVERAGE PERIOD - YEARS 51 - 70

			TOTAL				TOTAL		CHECK (STORAGE			
Model Year	Direct Precip	Runoff	INFLOW	Leakage	Evaporation	Overflow	OUTFLOW	BALANCE	FROM MODEL)			
	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet			
									3150			
51	122	77	198	36	156	71	263	3085	3085			
52	169	106	275	36	156	86	278	3082	3082			
53	215	136	350	36	156	142	334	3098	3098			
54	153	97	250	36	156	74	265	3083	3083			
55	191	120	311	36	156	96	289	3105	3105			
56	244	154	398	36	156	224	416	3086	3086			
57	111	70	180	36	156	0	192	3075	3075			
58	102	64	166	36	156	0	191	3050	3050			
59	161	102	263	36	156	24	216	3097	3097			
60	210	132	342	36	157	133	326	3113	3113			

### WATER BALANCE SUMMARY CRYSTAL CREEK AGGREGATE QUARRY EXPANSION

			Overflow									
Model			From Phases	TOTAL			TOTAL		CHECK (STORAGE			
Year	Direct Precip	Runoff	2 and/or 3	INFLOW	Leakage	Evaporation	Overflow	OUTFLOW	BALANCE	FROM MODEL)		
	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet		
										1590		
41	69	39	107	215	2	78	194	274	1532	1532		
42	110	63	99	271	2	78	177	256	1546	1546		
43	143	81	165	389	2	78	303	383	1553	1553		
44	138	79	157	374	2	78	289	369	1558	1558		
45	87	49	80	217	2	78	151	230	1544	1544		
46	82	47	55	184	2	78	100	180	1548	1548		
47	65	37	36	138	2	78	64	143	1543	1543		
48	100	57	101	257	2	78	178	258	1542	1542		
49	120	69	139	328	2	78	247	327	1543	1543		
50	170	97	237	503	2	78	426	505	1541	1541		

#### PHASE 1 - DRY PERIOD - YEARS 41 - 50 Overtiow

#### PHASE 1 - AVERAGE PERIOD - YEARS 41 - 50

			Overflow							
Model			From Phases	TOTAL				TOTAL		CHECK (STORAGE
Year	Direct Precip	Runoff	2 and/or 3	INFLOW	Leakage	Evaporation	Overflow	OUTFLOW	BALANCE	FROM MODEL)
	acre-feet	acre-feet		acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet
										1590
41	83	47	131	261	2	92	215	310	1541	1541
42	115	65	131	311	2	91	224	317	1535	1535
43	146	83	177	406	2	91	306	399	1542	1542
44	104	59	111	274	2	89	191	282	1534	1534
45	130	74	140	344	2	93	238	334	1544	1544
46	166	94	230	491	2	91	405	498	1537	1537
47	75	43	39	157	2	89	54	145	1549	1549
48	69	40	65	174	2	86	105	192	1530	1530
49	110	63	112	284	2	90	181	274	1541	1541
50	143	81	153	377	2	94	274	370	1548	1548

### WATER BALANCE SUMMARY CRYSTAL CREEK AGGREGATE QUARRY EXPANSION

	PHASE 2 - DRT FERIOD - TEARS 41 - 50												
Model Year	Direct Precip	Runoff	TOTAL INFLOW	Leakage	Evaporation	Overflow	TOTAL OUTFLOW	BALANCE	CHECK (STORAGE FROM MODEL)				
	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet				
									1101				
41	65	37	102	2	80	76	158	1045	1045				
42	103	59	162	2	84	65	152	1055	1055				
43	134	76	210	2	91	111	204	1061	1061				
44	129	74	203	2	93	106	202	1062	1062				
45	81	46	128	2	85	51	138	1052	1052				
46	77	44	121	2	82	34	117	1056	1056				
47	61	35	96	2	74	21	97	1055	1055				
48	93	53	147	2	79	69	149	1053	1053				
49	113	64	177	2	80	96	179	1051	1051				
50	160	91	250	2	83	165	250	1052	1052				

#### PHASE 2 - DRY PERIOD - YEARS 41 - 50

## PHASE 2 - AVERAGE PERIOD - YEARS 41 - 50

PHASE 2 - AVERAGE PERIOD - YEARS 41 - 50												
Model			TOTAL	TOTAL TOTA					CHECK (STORAGE			
Year	Direct Precip	Runoff	INFLOW	Leakage	Evaporation	Overflow	OUTFLOW	BALANCE	FROM MODEL)			
	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet			
									1101			
41	78	44	122	2	86	81	169	1054	1054			
42	108	61	169	2	82	88	172	1051	1051			
43	137	78	215	2	82	125	209	1057	1057			
44	98	56	153	2	81	77	159	1051	1051			
45	122	69	191	2	86	96	184	1058	1058			
46	156	89	244	2	83	165	250	1052	1052			
47	71	40	111	2	85	17	104	1059	1059			
48	65	37	102	2	75	39	116	1045	1045			
49	103	59	162	2	84	65	152	1055	1055			
50	134	76	210	2	91	111	204	1061	1061			
42 43 44 45 46 47 48 49	108 137 98 122 156 71 65 103	61 78 56 69 89 40 37 59	169 215 153 191 244 111 102 162	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	82 82 81 86 83 85 75 84	88 125 77 96 165 17 39 65	172 209 159 184 250 104 116 152	1051 1057 1051 1058 1052 1059 1045 1055				

### WATER BALANCE SUMMARY CRYSTAL CREEK AGGREGATE QUARRY EXPANSION

	FRASES - DRT FERIOD - TEARS 41 - 50											
					0	verflow to						
Model			TOTAL			Phase 1	TOTAL		CHECK (STORAGE			
Year	Direct Precip	Runoff	INFLOW	Leakage	Evaporation	Outlet	OUTFLOW	BALANCE	FROM MODEL)			
	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet			
									444			
41	27	11	38	0	22	31	53	429	429			
42	43	17	60	0	22	33	56	433	433			
43	55	22	78	1	22	54	76	434	434			
44	54	21	75	1	22	51	73	436	436			
45	34	13	47	0	22	29	51	432	432			
46	32	13	45	0	22	21	43	434	434			
47	25	10	35	0	22	15	37	432	432			
48	39	15	54	0	22	32	54	432	432			
49	47	19	66	0	22	43	65	432	432			
50	66	26	93	0	22	72	94	431	431			

# PHASE 3 - DRY PERIOD - YEARS 41 - 50

#### PHASE 3 - AVERAGE PERIOD - YEARS 41 - 50

PHASE 3 - AVERAGE PERIOD - YEARS 41 - 50											
					C	Overflow to					
Model			TOTAL			Phase 1	TOTAL		CHECK (STORAGE		
Year	Direct Precip	Runoff	INFLOW	Leakage	Evaporation	Outlet	OUTFLOW	BALANCE	FROM MODEL)		
	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet		
									444		
41	32	32	64	1	22	50	72	436	436		
42	45	17	62	0	22	43	65	432	432		
43	57	20	76	0	22	52	74	434	434		
44	41	13	53	0	22	34	56	431	431		
45	50	18	68	0	22	44	66	434	434		
46	65	23	87	0	22	65	88	433	433		
47	29	16	45	0	22	22	44	434	434		
48	27	20	47	0	22	26	48	433	433		
49	43	26	68	0	22	46	69	433	433		
50	55	12	67	1	22	42	65	436	436		

APPENDIX F MONITORING DATA TABLES

		Flow (CFS)		SC	(umhos/cm	)	TI	DS (mg/L)		pł	H (units)		TS	S (mg/L)	
	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down
12/30/04										7.42	7.37	7.46	15	<2	2
01/13/05															
05/15/06										7.20	7.55	7.61	2	<2	<2
05/15/06															
01/04/08				193											
02/23/09										7.21	7.58	7.60	2	<2	<2
02/23/09															
03/03/10				247	74	104	171	63	74						
12/30/11				638	84	248									
01/23/12										7.77	7.66	7.65	<2	<2	<2
02/29/12								77	100						
03/13/12				579	119	146	398			7.96	7.92	7.76	<2	4	66
03/23/12										7.78	7.85	7.87	<2	<2	<2
03/28/12					73	68				7.77	7.69	7.76	5	8	5
11/30/12							261	63					10.3	3.2	
12/05/12													<2	<2	
12/14/12													<2	<2	
12/21/12													7.0	3.7	
12/26/12							238	64					6.8	<2	
01/03/13	0.44	5.38	5.60							8.22	8.42		<2	<2	
01/10/13	0.10	3.28	3.36							7.85	8.36		2.2	<2	
01/17/13	0.05	2.23	2.24							7.93	7.93		2.8	<2	
01/24/13	0.03	1.18	1.16							7.89	7.99		<2	<2	
01/31/13	0.02	1.18	1.16							7.94	8.02		<2	<2	
03/06/14	8.20	17.40	20.40							6.85	7.84	8.04	<2	3.2	3.3
03/10/14	0.44	8.50	9.30							7.16	7.88	8.06	<2	<2	<2
04/01/14	0.28	2.23	2.24							7.04	7.62	8.07	<2	<2	<2

	Settleab	le Solids	(mg/L)	Turb	idity (NT	)	Harc	lness (mg	g/L)	Alum	ninum (uք	g/L)	Ars	enic (ug/L	.)
	Pond 3 Out	M.C. Up	M.C. Down												
10/00/01				25.0			70								
12/30/04	<0.1	<0.1	<0.1	25.9	5.4	5.84	73	32 29	28 29						
01/13/05 05/15/06	-0.1	-0.1	-0.1	2.14	0.59	0.00	41 63	29 28	29 31				0.5	0.3	0.4
05/15/06	<0.1	<0.1	<0.1	2.14	0.59	0.90	03	28	51				0.5	0.5	0.4
03/13/08															
01/04/08	<0.1	<0.1	<0.1	13.1	5.37	7.23	59	22	31						
02/23/09	<0.1	<0.1	\0.1	13.1	5.57	7.25	55	22	51						
03/03/10															
12/30/11					9.2	8.5							0.2		
01/23/12	<0.1			3.8	512	0.0							0.2		
02/29/12					2.2	55.2							0.3	0.4	
03/13/12	<0.1			0.7						13.4	62.7	2020			
03/23/12	<0.1			0.8	0.6	0.7									
03/28/12	<0.1			10.7	9.2	8.6	208	28	25						
11/30/12															
12/05/12															
12/14/12															
12/21/12															
12/26/12							169	29							
01/03/13	<0.1			13.02	0.32										
01/10/13	<0.1			2.18	0.25										
01/17/13	<0.1			0.97	0.22		250	34							
01/24/13	<0.1			1.01	0.23										
01/31/13	<0.1			0.56	0.17										
03/06/14	<0.1			11.12	4.81	6.07									
03/10/14	<0.1			9.18	0.96	1.23									
04/01/14				9.47	1.43	1.77									

	Cadr	nium (ug/	/L)	Chro	mium (ug/	L)	Coj	oper (ug,	/L)	Ir	on (ug/L)			Lead (ug/L)	
	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 ()ut	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down
12/30/04															
01/13/05															
05/15/06	<0.05	<0.05	1.45	1.5	0.9	1.1	3.9	1.8	1.8				<0.1	0.2	
05/15/06							2.5	1.4	1.4						
01/04/08															
02/23/09															
02/23/09															
03/03/10															
12/30/11	0.05			<0.1			2						<0.1		
01/23/12															
02/29/12	< 0.05	<0.05		<0.1	<0.1		1.9	3.4					< 0.1	0.2	
03/13/12										160	148	2990			
03/23/12															
03/28/12															
11/30/12															
12/05/12															
12/14/12															
12/21/12															
12/26/12	0.10	<0.05					5.9	2.2							
01/03/13															
01/10/13															
01/17/13	<0.05	<0.05					2.8	1.9							
01/24/13															
01/31/13															
03/06/14															
03/10/14															
04/01/14															

	Mar	nganese (ug	g/L)	M	ercury (ug/L	.)	Ν	lickel (ug/L)	)	S	ilver (ug/L)			Zinc (ug/L)	
	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down	Pond 3 Out	M.C. Up	M.C. Down
12/30/04															
01/13/05													42	6	8
05/15/06				2.05	2.61	2.49	0.8	0.3	0.3	0.14	0.38	0.16	26.7	3.3	3.8
05/15/06				2.05	2.01	2.45	0.8	0.5	0.5	0.14	0.58	0.10	33.9	10	8.9
01/04/08													55.5	10	
02/23/09													35	7.0	6.9
02/23/09													27.4	2.6	4.5
03/03/10															
12/30/11				1.49			2.3			<0.10			68.9		
01/23/12															
02/29/12				0.79	4.02		2	0.4		<0.10	<0.10		55.3	3.4	
03/13/12	112	8.1	84.4												
03/23/12															
03/28/12															
11/30/12															
12/05/12															
12/14/12															
12/21/12															
12/26/12													53.1	3.2	
01/03/13															
01/10/13															
01/17/13													35.3	3.1	
01/24/13															
01/31/13															
03/06/14															
03/10/14															
04/01/14															

## Crystal Creek Aggregate Monitoring

#### R5-2002-0160

Parameter	Frequency
Precipitation	Daily
Sedimentation Ponds Liquid depth	
Freeboard Discharge Settling Agent	Weekly
D-001 (pond effluent) Flow pH Settleable solids TSS	Daily if precip >1", biweekly if continuous discharge
Turbidity Zinc (total & dissolved) Hardness	Monthly
Priority poll. metals Acute toxicity R-1, R-2 (Middle Creek)	2x year Annually
pH TSS Turbidity	Daily if precip >1", biweekly if continuous Q
Hardness Zinc (total & dissolved)	Monthly
Priority poll. metals	2x year

#### R5-2008-0061

#### Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)					
SW-001	EFF-001	Outfall from Pond #3 Latitude 40° 36' 17" N, Longitude 122° 27' 47" W.					
SW-002	EFF-002	Stormwater discharge to Rock Creek					
	RSW-001	Middle Creek, approximately 50 feet above the confluence of unnamed tributary and Middle Creek.					
-	RSW-002	Middle Creek, approximately 100 feet downstream of confluence of unnamed tributary and Middle Creek.					
Settling Basin #1	PND-001	Settling Pond #1 south of recycle ponds and north of by-pass culvert.					
Settling Basin #2	PND-002	Settling Pond #2 south of recycle ponds and south of by-pass culvert.					
Settling Basin #3	PND-003	Settling Pond #3 south of Settling Pond #3.					
North Recycle Pond	PND-004	East of processing plant					
South Recycle Pond	PND-005	East of processing plant and south of the North Recycle Pond					
Water Rights Pond	PND-006	East side of quarry, between north and south haul roads					

#### Table E-2. Effluent Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Estimated Flow	gal/min	Visual	Weekly during discharge <sup>1,7,8</sup>	
Turbidity	NTU	Grab	Weekly during discharge <sup>1, 7, 8</sup>	
pН	units	Grab	Weekly during discharge <sup>1,7,8</sup>	
Settleable Solids	mL/L	Grab	Weekly during discharge <sup>1,7,8</sup>	
Total Suspended Solids	mg/L	Grab	Weekly during discharge <sup>1, 8</sup>	
Cadmium, dissolved	ug/L	Grab	Monthly during discharge <sup>1, 6, 8</sup>	
Copper, dissolved	ug/L	Grab	Monthly during discharge <sup>1,6,6</sup>	
Zinc, dissolved	ug/L	Grab	Monthly during discharge <sup>1, 6, 8</sup>	
Hardness	mg/L	Grab	Monthly during discharge <sup>1, 6, 8</sup>	
Alkalinity	mg/L	Grab	Monthly during discharge <sup>1, 6, 8</sup>	
Electrical Conductivity @ 25°C	umhos/cm	Grab	Annually	
Aluminum	ug/L	Grab	Annually	
Iron	ug/L	Grab	Annually	
Manganese	ug/L	Grab	Annually	
Total Dissolved Solids	mg/L	Grab	Annually	
Oil & Grease	mg/L	Grab	Annually	
Acute Toxicity	% Survival	Grab	Annually	
Priority Pollutant Metals 2,3	ug/L	Grab	Annually	
Chronic Toxicity	% Survival	Grab	Bi-annually	
Priority Pollutants 2.4.5	ug/L	Grab	Bi-annually	

Initial samples shall be collected during daylight hours during the first discharge after the dry season.
 Detection limits shall be at or below the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).
 Antimony, arsenic, beryllium, cadmium, chromium III, chromium IV, copper, lead, mercury (EPA Method 1600/1031), nickel, selenium, silver, thallum, zino, and cyamide.
 Priority Pollutants – one set during 1st 2-years of the permit, and one set during the 2nd 2-years of the permit.
 126 Priority Pollutants except asbestos, and dioxins/furans.
 Samples shall be collected during the first rainfall event that produces ½-inch or greater precipitation per day (if one occurs during the month).

(7) Daily when rainfall events produce a ½-inch or greater precipitation per day, up to a total of four samples per calendar week.
 (8) Sampling (routine sampling) other than when a ½-inch or greater precipitation per day occurs is only required during 15 October through 15 May.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Estimated Flow	gal/min	Visual	Weekly during discharge <sup>1, 7, 8</sup>	
Turbidity	NTU	Grab	Weekly during discharge <sup>1, 7, 8</sup>	
рН	units	Grab	Weekly during discharge <sup>1, 1, 1</sup>	
Total Suspended Solids	mg/L	Grab	Weekly during discharge <sup>1,8</sup>	
Cadmium, dissolved	ug/L	Grab	Monthly during discharge <sup>1.6,8</sup>	
Copper, dissolved	ug/L	Grab	Monthly during discharge <sup>1, 5, 5</sup>	
Zinc, dissolved	ug/L	Grab	Monthly during discharge <sup>1.5.5</sup>	
Hardness	mg/L	Grab	Monthly during discharge <sup>1, 6, 8</sup>	
Electrical Conductivity @ 25°C	umhos/cm	Grab	Annually	
Aluminum	ug/L	Grab	Annually	
Iron	ug/L	Grab	Annually	
Manganese	ug/L	Grab	Annually	
Total Dissolved Solids	mg/L	Grab	Annually	
Priority Pollutant Metals 2.3	ug/L	Grab	Annually	
Priority Pollutants 24.5	ug/L	Grab	Bi-annually	

Table E-4. Receiving Water Monitoring Requirements (RSW-001 and RSW-002)

Initial samples shall be collected during daylight hours during the first discharge after the dry season.
 Detection limits shall be at or below the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).
 Antimony, arsenic, beryllium, cadmum, chromium III, chromium IV, copper, lead, mercury (EPA Method 1660/1631), nickel, selenium.

silver, thallium, zinc, and cyanide. (4) Priority Pollutants – one set during 1st 2-years of the permit, and one set during the 2nd 2-years of the permit.

 (d) Friorly Pollutaria - other bound of a stream of the period and the period of the period of the period.
 (d) Samples shall be collected during the first rainfall event that produces ½-inch or greater precipitation per day (if one occurs during the month).

 (7) Daily when rainfall events produce a ½-inch or greater precipitation per day, up to a total of four samples per calendar week.
 (8) Sampling (routine sampling) other than when a ½-inch or greater precipitation per day occurs is only required during 15 October through 15 May

#### A. Recycle and Settling Ponds

The Discharger shall monitor the recycle ponds (PND-004 and PND-005) and sedimentation ponds (PND-001 through PND-003) as follows:

Table E-5.	Recycle	and	Sedimentations	Ponds
------------	---------	-----	----------------	-------

Constituent	Units	Sample Type	Minimum Sampling Frequency	Reporting Frequency
Freeboard	Feet, inches	Visual	Weekly	Monthly
Liquid depth	Feet, inches	Visual	Weeklt	Monthly
Discharge	Yes/No	Visual	Weekly	Monthly
Settling Agent Used	Yes/No	Document	Weekly	Monthly

#### **B.** Precipitation Monitoring

The daily precipitation at the Crystal Creek Aggregate, Inc. facility shall be recorded on weekdays and weekends. The reading shall be taken at the same time each day and submitted as follows:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Precipitation	Inches (+/-0.1)	Visual	Daily	Monthly