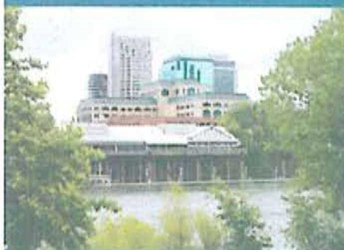
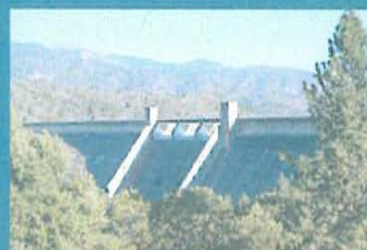
Attachment No. 8
Tully and Young Peer Review Report,
December 1, 2014

Please see attached document

Tully & Young
Comprehensive Water Planning

Tully & Young, Inc.
3600 American River Drive, Suite 260
Sacramento, CA 95864






December 1, 2014

Final Summary Analysis and Conclusions for the Peer Review of *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry* (prepared by EMKO, February 26, 2014)

Prepared for:
County of Tulare
Resource Management Agency

Synthesizing Hydrology, Engineering, Law & Policy

Final Summary Analysis and Conclusions for the Peer Review of *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*

Prepared for:

County of Tulare
Resource Management Agency

December 1, 2014

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MEMORANDUM

To: Michael C. Spata, Director
Tulare County Resource Management Agency

From: Greg Young, P.E.

Date: December 1, 2014

Subject: Final Summary, Analysis and Conclusions

The purposes of this memorandum are as follows:

(1) Analyze additional materials provided to Tulare County's Resource Management Agency ("RMA") during October 2014 from CEMEX Construction Materials Pacific, LLC ("CEMEX"), operator of the Stillwell Mine Project ("Quarry");

(2) Provide responses to certain public comments to the August 25, 2014 *Peer Review Report of Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry* and the *Addendum* (collectively the "Peer Review Memo");

(3) Submit findings and conclusions of the overall review and evaluation effort; and

(4) Provide recommendations to RMA.

Summary of Prior Tully & Young Memoranda

In July 2014, Tully & Young was contacted by the RMA to evaluate the findings from the *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*, prepared by EMKO dated February 26, 2014 ("Report"), and present conclusions of the review.

In late August 2014, Tully & Young provided RMA with the Peer Review Memo detailing the requested analysis and conclusions. The Peer Review Memo was made publically available shortly thereafter with a request for public comments to be submitted to the RMA by the end of September.

Several public comment letters were received by RMA, three of which included direct comments on the Peer Review Memo and warranted responses from Tully & Young. A *Response to Comments Memorandum* ("Response Memo") was prepared by Tully &

Young to address these specific comments. The Response Memo, along with the associated marked public comment submittals, is included as **Appendix A** to this memorandum.

The original Peer Review Memo (including the Addendum and all attachments) is provided in its entirety in **Appendix B** to this memorandum.

Organization of Memorandum

This memorandum -- the *Final Summary, Analysis and Conclusions Memorandum* ("Final Memo") -- is organized to provide the results of analysis of information provided since the Peer Review Memo was published and to provide final summary conclusions for consideration by the RMA.

This Final Memo is organized as follows:

Section 1 – Final Summary, Analysis and Conclusions

Part 1: December 1, 2014 *Final Summary, Analysis and Conclusions Memorandum* from Tully & Young to Tulare County RMA

Part 2: Attachments

1. August 26, 2014 letters from Mitchell Chadwick to Mr. Morton, Mr. Cloud, Mr. Packard, and Mr. and Mrs. Rodriguez offering data loggers for resident wells
2. October 7, 2014, EMKO Memorandum - Status of Water Level Monitoring: Data Collected Through September 16, 2014 – Stillwell Mine Project
3. October 29, 2014, EMKO Memorandum – Effects of Mining Activities on Groundwater – CEMEX Stillwell Mine
4. October 30, 2014, EMKO Memorandum – Comparison of Groundwater Elevations and Dewatering Volumes – Stillwell Mine Project
5. DellaValle Laboratory, Inc. – CEMEX Location Map #3 (MW1, MW2, MW3, MW4, Stillwell, Mills, Morton, Cairnes)
6. August 25 ,2014, EMKO Memorandum – Water Quality Data – CEMEX Stillwell Mine

Section 2 - Appendices:

Appendix A

Part 1: November 28, 2014 *Response to Comments Memorandum* from Tully & Young to Tulare County RMA

Part 2: Comment Letters marked to correspond to responses in memorandum

Appendix B

Part 1: August 25, 2014 *Peer Review Memorandum* from Tully & Young to Tulare County RMA and attachments

Part 2: August 25, 2014 *Addendum to Peer Review Memorandum* from Tully & Young to County RMA and attachments

Section 1 – Part 1

Summary, Analysis and Conclusions

Subsequent to the Peer Review Memo, CEMEX and its representatives provided several additional data sets, analyses, and conclusions. Many of these related directly to the placement of data loggers[1] into several adjacent wells and on-site monitoring wells in at the end of August 2014.

As stated in letters provided by CEMEX to adjacent residents, data loggers will "*provide an accurate analysis of the effects of dewatering and filling the V-ditch on groundwater levels surrounding the Stillwell property.*" See opening paragraphs in letters included as **Attachment 1**.

This equipment was to begin collecting more frequent well elevation data than the previously recorded once-per-month reading by DellaValle Laboratory, Inc. ("DellaValle"). As of this memorandum, data logger readings have recorded groundwater elevations from August 28, 2014 through October 21, 2014.

The additional materials provided also included three memoranda from EMKO Environmental, Inc. ("EMKO") providing analysis of data and conclusions (the "EMKO Memos"). These additional materials included:

- October 7, 2014 - Status of Water Level Monitoring: Data Collected Through September 16, 2014 – Stillwell Mine Project (included as **Attachment 2**);
- October 29, 2014 – Effects of Mining Activities on Groundwater – CEMEX Stillwell Mine (included as **Attachment 3**); and
- October 30, 2014 – Comparison of Groundwater Elevations and Dewatering Volumes – Stillwell Mine Project (included as **Attachment 4**)

Finally, on November 26, 2014, the most recent once-per-month groundwater elevation readings from DellaValle were forwarded by RMA to Tully & Young. These readings appear to have been taken on or about November 19, 2014, and, although not continuous readings as taken by the data loggers, they provide a set of single-point extensions of the August 28 through October 21 data logger readings.

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[1] A data logger is an electronic instrument that can measure the depth to groundwater in a well. When calibrated and related to the ground surface elevation at the particular site, the information collected by the data logger provides an accurate representation of depth to groundwater (in relation to mean seal level) that can be used to compare groundwater conditions among and between well locations.

This section of the Final Memo provides analysis of the EMKO Memos and independent analysis of the groundwater level information collected by the data loggers and as provided by DellaValle.

Key Findings

As detailed in this Final Memo, changes in groundwater elevation appear to have a direct correlation to discharge of water to the "V" ditch. Thus, as evident by the relationship between the restarting of water discharged to the "V" ditch and the concurrent rise in groundwater elevations in monitoring wells and adjacent private wells, discharge to the "V" ditch to "*maintain water levels in neighboring wells*" (Conditions of Approval #55) appears to be a vital function of mining activities.

This Final Memo's assessment of the facts appears to directly contradict the repeated statements in the original February 2014 Report and subsequent conclusions provided in the recent EMKO Memos that the "*mining activities cannot be responsible for the changes in yield or water levels observed in the private wells*." (October 29, 2014 EMKO Memo, p. 4), and "[*t]herefore, the only scientifically supportable conclusion is that mining activities have not affected the private wells*." (October 29, 2014 EMKO Memo, p. 5).

The most recent EMKO Memos do not discuss the positive response in groundwater elevations demonstrated by the data loggers upon restarting discharge to the "V" ditch from September 2 through October 21, 2014, nor do they provide any discussion or analysis to disprove the apparent direct relationship between this "mining activity" and groundwater elevations in the adjacent private wells.

Finally, the EMKO Memos misstates data or provides factually inconsistent data when compared to prior provided materials and analysis, which collectively significantly affects the usefulness and factual merit of the EMKO Memos altogether.

Detailed Review of EMKO Memos

The following details the assessment and findings resulting from reviewing the three EMKO Memos.

October 7, 2014 Memo

[*Note to reader: This first memorandum ("Oct 7 Memo") was provided to Tully & Young in early November in draft form with some edits by CEMEX representatives still embedded (see* ***Attachment 2****). It accompanied the other two memoranda.*]

The Oct 7 Memo presents initial data from the data loggers for the period of August 28, 2014 through September 16, 2014 coupled with factual explanation of the "V" ditch's segmented configuration and operations.

The Oct 7 Memo provides a map identifying the various monitored well locations and hydrographs showing the monitored groundwater elevation. The Oct 7 Memo also provides a conceptual hydrogeological cross section and accompanying explanation regarding the interpretation of conditions "*during the period of initial pumping from the mine excavation.*" (Oct 7 Memo, p. 3).

Finally, the Oct 7 Memo concludes by stating: "*The water levels from the nine wells currently being monitored with dataloggers will be downloaded approximately every six weeks. The data will be evaluated and discussed in a technical memorandum similar to this document after each download. It is expected that monitoring using the dataloggers will continue at least until equilibrium conditions develop in each well.*" (Oct 7 Memo, p. 4).

Assessment: The Oct 7 Memo assessed groundwater level information collected through September 16, 2014. Subsequently, groundwater level information has been provided through the morning of October 21, 2014, though not assessed in the remaining two EMKO Memos.

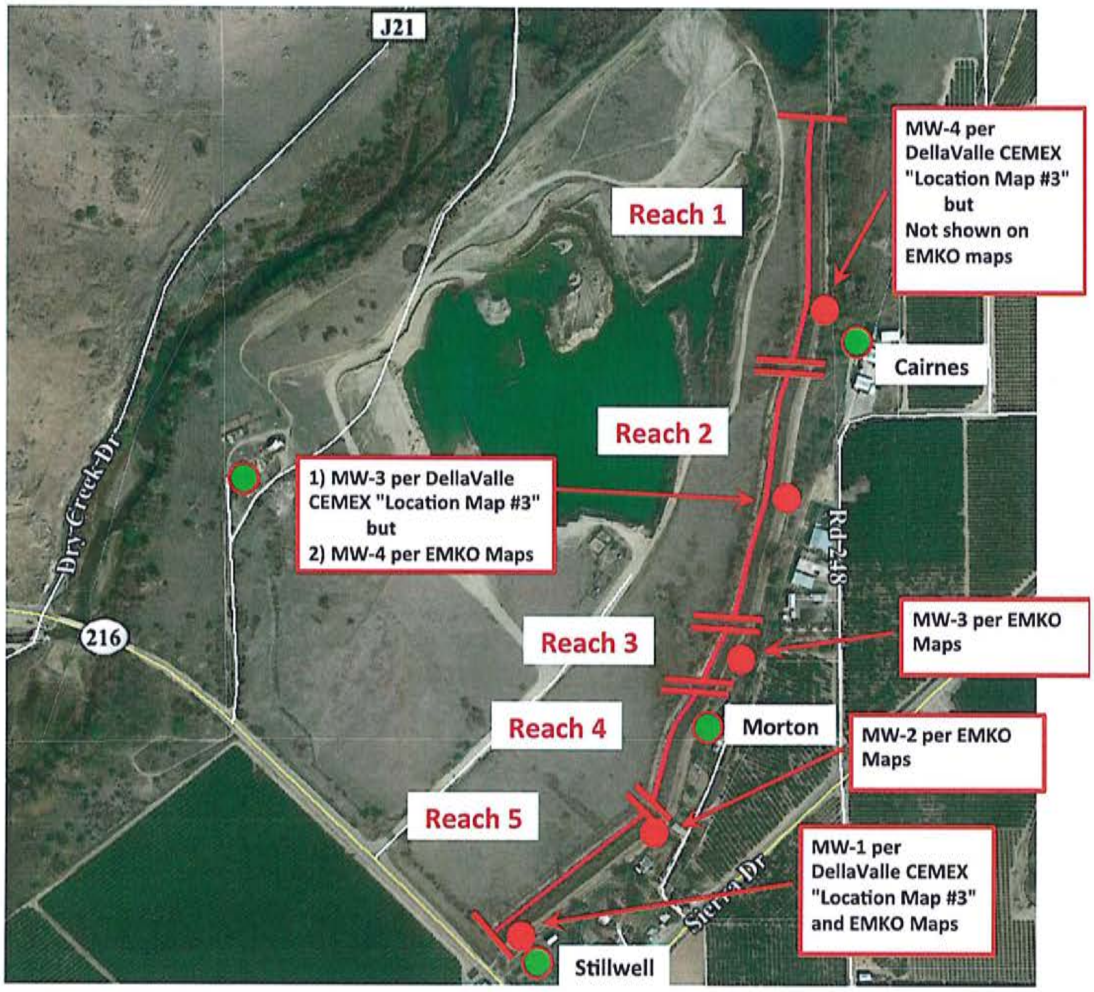
As discussed later in this Final Memo at pages 18 through 22, this additional information is very informative in assessing the relationships between discharges to the "V" ditch and groundwater levels in the private wells, essentially making any analysis provided by the Oct 7 Memo irrelevant.

Importantly, though, the Oct 7 Memo does not attempt to conclude that there is no relationship between the mining activities and groundwater elevations in the adjacent private wells – recognizing that such a conclusion would be premature.

One major concern regarding factual information, however, was highlighted by the map accompanying the Oct 7 Memo. Specifically, there appears to be potential inconsistencies in the naming of monitoring wells, and thus, the location of monitoring wells and use of their data for comparative analysis. This has the potential to create significant issues with interpretation of data.

The figure that follows illustrates these variations, especially with regard to the naming/location of MW-2, MW-3 and MW-4. The referenced DelleValle monitoring well locations are based upon a map from DellaValle, included as **Attachment 5**.

The figure shows the "V" ditch reaches as described in the Oct 7 Memo and as validated through inspection of aerial imagery. Of importance to the interpretation and analysis of data is the location of the monitoring wells in relation to the reach of "V" ditch and the related fill-and-spill operations of the "V" ditch as described in the Oct 7 Memo.



As described in the Oct 7 Memo, Reach 1 of the "V" ditch must fill before water begins to flow into Reach 2. Reach 2 must fill prior to spilling into Reach 3, while Reach 3 and 4 fill simultaneously. Thus, the location of MW-4 in the Oct 7 Memo is in Reach 2, while the DellaValle map shows MW-4 in Reach 1. The Oct 7 Memo indicates MW-3 within Reach 3, which wouldn't see water until both Reach1 and Reach 2 fill.

As shown in the hydrographs accompanying the Oct 7 Memo, groundwater levels in MW-4 and MW-3 both begin to rise within a day of each other, which would indicate that the first two reaches filled almost immediately.

Otherwise, one would expect a delayed reaction in MW-3 groundwater elevations, given the high seepage rate described on page 2 of the Oct 7 Memo.

Further adding to the confusion is the Oct 7 Memo's statement: "*In MW-4, which is located near the south end of the northern segment of the V-ditch, water levels increased almost 10 feet from September 3, 2014 to September 16, 2014. In MW-3, which is located near the middle of the second segment of the V-ditch, water levels increased more than 11 feet from September 4, 2014 to September 16, 2014.*" (Oct 7 Memo, p. 2/3).

On the Oct 7 Memo's map with the hydrographs, MW-3 is shown in Reach 3 and MW-4 is shown in Reach 2. This contradicts the text description of their respective locations.

From analysis of subsequent provided groundwater level data (discussed later in this Final Memo), it seems readily apparent that MW-4 and MW-3 are very closely related, both in response to future temporary pumping shutdowns and in apparent equilibrium groundwater elevations as water is reintroduced into the "V" ditch.

Finally, this apparent discrepancy raises questions about the use of the historic groundwater elevation data when comparing to the data logger's information. For instance, if, as referenced by the Oct 7 Memo, prior efforts to prepare groundwater contours also are misrepresenting the location of these wells, then those contours are incorrect and resulting assessment in the Oct 7 Memo unreliable.

Conclusions: While the Oct 7 Memo did not intend to make conclusions, its representation of factual information in a manner differently within the same document and differently than DellaValle clouds the analysis of data and, thus the usefulness of the Oct 7 Memo's own analysis.

However, since significantly more groundwater level information was provided with subsequent memoranda, the primary conclusion of this Final Memo's assessment is that the factual data regarding the locations of monitoring wells must be double-checked and corrected in either the EMKO Memos or the DellaValle maps before being used to represent findings.

October 29, 2014 Memo

The October 29, 2014 memorandum (Oct 29 Memo) lists the subject as *Effects of Mining Activities on Groundwater – CEMEX Stillwell Mine*. The memorandum begins by conclusively listing the "*only plausible hydrologic mechanisms by which mining activities could affect water level or well yield in neighboring private wells*:" (Oct 29 Memo, p. 1) followed by a list of three mechanisms.

The Oct 29 Memo then proceeds to address each mechanism concluding "*Therefore, this data proves that mechanisms 1 and 2 are not occurring*," and "*Therefore, mechanism #3 is not occurring*." (Oct 29 Memo, p. 3 and p. 4). These two conclusions lead to the final conclusion "*Therefore, the only scientifically supportable conclusion is that mining activities have not affected the private wells*." (Oct 29 Memo, p. 5).

Assessment: The Oct 29 Memo aggressively concludes that since the three "only plausible mechanisms" are not occurring, mining activities are not the cause of groundwater level declines. However, investigating the Oct 29 Memo's approach and basis uncovers other considerations disregarded by the analysis that could affect its conclusions.

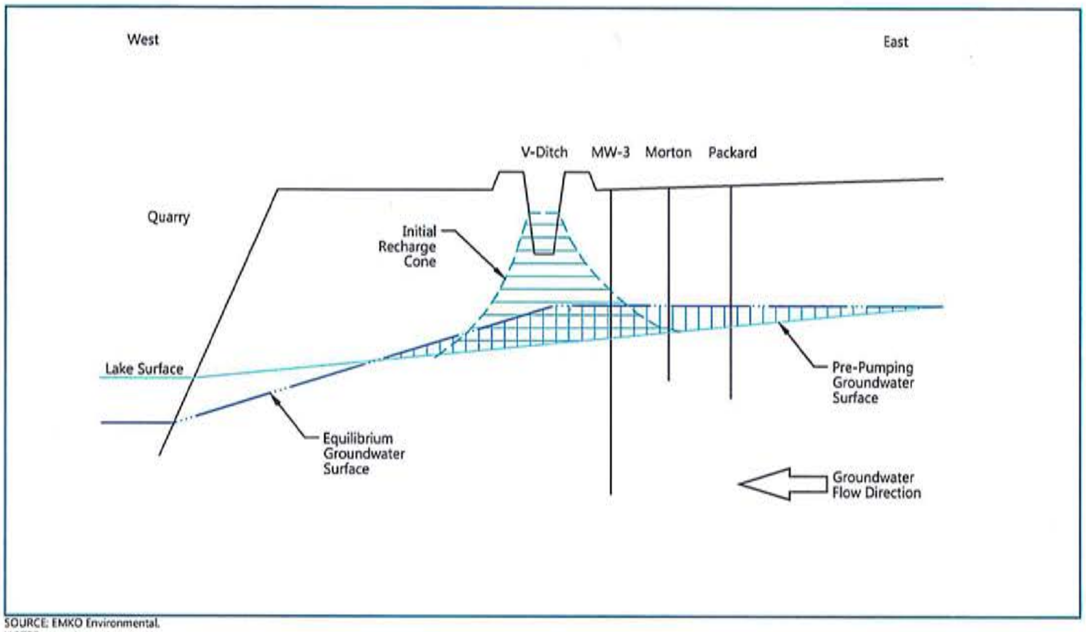
Mechanism 1 is described as: "*[p]umping to dewater the mine could lower the water table between the excavation and the neighboring private wells, drawing water into the mine and away from the private wells*" while Mechanism 2 states: "*[t]he open quarry excavation, even in the absence of dewatering, could alter the groundwater contours and pull water away from the neighboring private wells and into the mine excavation.*" (Oct 29 Memo, p. 1).

The Oct 29 Memo states that for either mechanism to occur, groundwater surface must slope downward from the private wells to the excavation and continues by comparing the Morton well elevations to those in MW-3. The Oct 29 Memo asserts that MW-3 must be "*consistently lower than the level in the Morton well*" (Oct 29 Memo, p. 2) for either mechanism to occur, then demonstrates that groundwater elevations in MW-3 are consistently higher than the Morton well (with a few noted exceptions) – thus the mechanisms do not occur. The following explains the inaccuracies in this analysis.
As required by the Conditions of Approval (Conditions), the Quarry shall construct a "V" ditch that "*shall contain a sufficient amount of water in order to establish a groundwater mound (groundwater barrier) to maintain water levels in neighboring wells.*" (Condition #55). As illustrated by EMKO in Figure 1 accompanying the Oct 7 Memo (see below, and **Attachment 2**), the water discharged to the "V" ditch creates a mound.

Because of the immediate proximity of the monitoring wells to the "V" ditch, the elevations in the monitoring wells will reflect the fact that water is percolating into the ground from the "V" ditch – as defined by the soil's characteristics between the "V" ditch and the monitoring well.

As shown in the figure, the "recharge cone" will affect the measured elevation of groundwater in the monitoring wells. Thus, it is expected that groundwater elevations in the monitoring wells are likely higher than levels in the adjacent private wells as they would reflect the presence of water in the "V" ditch and the resulting recharge cone – and not just during "initial recharge," but consistently when sufficient water is being supplied to the "V" ditch.

The historic groundwater elevation data supports this by the fact that all of the monitoring wells are routinely higher than the adjacent, upgradient private wells in nearly all of the once-per-month readings dating back to 2006. When pumping to the "V" ditch ceased in September 2013, groundwater levels in the monitoring wells dropped below the values in the private wells – especially when comparing MW-3 to the Morton well, as was the focus of the Oct 29 Memo's analysis to disprove mechanism #1 and #2.



SOURCE: EMKO Environmental.
NOTES:
1. Comparison of pre-pumping groundwater surface with the initial recharge cone and the long-term equilibrium groundwater surface. CEMEX Stillwell Quarry, Tulare, California.

0 250 500 1,000 Feet

EMKO Environmental, Inc.

Conceptual Hydrogeologic Cross Section
STILLWELL QUARRY
Figure 1

Based on the data from DellaValle, the groundwater elevations in the Morton well were routinely lower than MW-3 until September 2013, when MW-3 became lower than the Morton well, likely as a direct result of the stoppage of discharge to the "V" ditch. This trend continued until discharges to the "V" ditch began again in September 2014, at which time MW-3 groundwater levels again became higher than those in the Morton well (though both began to rise as a result of the restart of discharge)[2].

The Oct 29 Memo's assertion that mining activities are not affecting the Morton well because groundwater elevations are routinely higher in MW-3 than the Morton well fails to recognize the mounding affect and associated higher readings in the monitoring wells from influence of the consistent "recharge cone." Thus the Oct 29 Memo's conclusion that mechanism #1 and #2 are not occurring is not proven by the presented analysis.

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[2] DellaValle did not provide readings for any of the monitoring wells from December 2013 through February 2014 due to "no key." No readings were provided for the Morton well during May 2014, July 2014 and August 2014 for unstated reasons.

As an added concern, the discussion for the Oct 7 Memo indicated an apparent disagreement on the location of MW-3, thus the relationship between the location and associated groundwater elevations in the Morton well and MW-3 may not be as presented by the Oct 29 Memo.

Mechanism #3 states: "*The mine pit, even in the absence of dewatering, could alter the groundwater contours such that flow of water from the area upgradient of the private wells is diverted into the excavation and away from the private wells.*" (Oct 29 Memo, p. 1). The analysis uses water quality to test for the occurrence of this mechanism, specifically providing nitrate data for the Stillwell Mine Pit and the Morton and Cairns wells for only two selected sample events: June 2006 and September 2014. As documented in the Oct 29 Memo, nitrate values were significantly higher during these two periods in the private wells than in the mine pit.

Thus, the Oct 29 Memo states: "*after more than seven years of dewatering of the mine, and an additional year where the excavation was re-filling with groundwater after dewatering ceased in September 2013, nitrate is not present in the water within the excavation. Therefore, mechanism #3 is not occurring.*" (Oct 29 Memo, p. 4).

Water quality reports provided by EMKO in August 25, 2014 were inspected to evaluate the Oct 29 Memo's assertion (see **Attachment 6**). As detailed in several of the DellaValle water quality reports (see specifically pages 60-113 of **Attachment 6**), water quality tests were performed annually for the monitoring wells and several of the private wells throughout 2005 to 2013.

Neither the mine pit nor the "V" ditch were sampled other than the single June 2006 mine pit sampling event used by the Oct 29 Memo. However, as asserted and supported by data, the water in the "V" ditch percolates into the groundwater, with the "recharge cone" resulting in some of the recharged water being present in the monitoring wells.

As such, it would seem plausible that the water quality information from the monitoring wells would provide a proxy for water quality of the "V" ditch, and since the water is pumped into the "V" ditch from the mine pit, then a proxy also for the water quality of the mine pit.

This is likely true especially for MW-3 and MW-4, as they show immediate reaction in groundwater level when discharge to the "V" ditch occurs, as evidenced by the figures and data presented in Oct 7 Memo, and data logger readings provided subsequent to the Oct 7 Memo's analysis period.

Based upon examining the water quality of MW-3 and MW-4 it is apparent that there are at least wide fluctuations in the nitrate results from sample to sample, leading to uncertainty regarding the usefulness of this particular water quality constituent to test the validity of mechanism #3.

For instance, as shown in the excerpt from **Attachment 6** (included below), nitrate in MW-3 (listed as NO_3) ranged from 6.78 mg/l to 59.8 mg/l over just three samples. In August of 2008, the sample for MW-3 was <0.045 mg/l, while MW-4 was 304 mg/l – in the same sampling event.

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Summary of Groundwater Monitoring Well Analysis Cemex

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Lab No.	Date	TIME	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO3 as $CaCO_3$	HCO3 as CaCO3	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
				mg/l													
MW - 1																	
85263	5/19/05	11:08 AM	7.0	101	<1	<1	101	17.6	43.5	3.9	17.1	206	33.3	6.4	29.1	2.5	0.9
93772	5/11/06	5:00 PM	7.2	126		<1	126	15.8	<0.2	5.1	22.6	263	45.0	8.5	26.4	3.2	0.2
104616	6/14/07	2:10 PM	7.6	141	<1	<1	141	12.4	37.2	0.4	1.59	248	40.4	7.1	24.0	2.0	1.7
MW - 2																	
85263	5/19/05	12:24 PM	7.9	179		<1	179	24.8	127	15.3	67.7	489	55.3	30.2	60.6	6.1	4.3
93772	5/11/06	4:24 PM	7.8	259		<1	259	20.5	<0.2	11.9	52.5	613	61.8	30.2	48.8	6.3	3.1
104616	6/14/07	1:43 PM	8.1	228	<1	<1	228	21.7	107	14.8	65.5	515	60.4	29.1	49.0	5.6	15.4
MW - 3																	
85263	5/19/05	12:48 PM	7.5	293		<1	293	46.1	143	10.0	44.3	652	92.3	25.4	90.2	5.0	0.5
93772	5/11/06	3:00 PM	7.3	285		<1	285	33.5	<0.2	13.5	59.8	660	90	25.2	76.7	6.3	0.3
104616	6/14/07	12:45 PM	7.7	109	<1	<1	109	13.4	27.1	1.5	6.78	205	30.4	8.6	17.0	1.6	0.5
MW - 4																	
85263	5/19/05	1:20 PM	7.6	233		<1	233	34.9	108	18.8	83.5	559	81.2	21.5	74.0	3.5	2.4
93772	5/11/06	2:05 PM	7.5	286		<1	286	32.8	<0.2	17.9	79.1	605	78.2	21.7	65.9	4.6	1.6
104616	6/14/07	12:20 PM	8.0	234	<1	<1	234	38.7	79.4	12.3	54.6	512	59.5	19.3	63.0	2.8	2.0

Dissolved metals (bolded) were filtered.
F:\Client C\CEMEX #13588\2007\[MW Analysis Summary 05-07.xls]Table

Additional sample-specific results in Attachment 6 further show variations in nitrate at MW-3 include: 79.5 mg/l in July 2011, 11.9 mg/l in April 2012 and <2 mg/l in June 2013. At these same instances, nitrate results in MW-4 were 67.4 mg/l, 67.3 mg/l and 75 mg/l for the same sample events. So, in June of 2013, MW-3 read <2 mg/l while MW-4 read 75 mg/l.

During this same period – though taken in a different month, which affects the comparability, the Morton well was measured at 48.9 in January 2011 (compared to higher values at the two monitoring wells), 86.9 in May 2012, and 78.8 in April 2013.

Notably, many factors can affect the magnitude of nitrate as measured at a particular location. But the above example indicates that variations occur from sample to sample, often significantly. As such, using the monitoring well data as a proxy in the absence of mine pit water quality data, there does not appear to be conclusive evidence to evaluate whether mechanism #3 is occurring.

Specifically, using nitrate readings from only two sampling events, June 2006 and September 2014, to conclude that mechanism #3 is not occurring seems arbitrary and not supportable when evaluating a broader set of evidence.

Conclusions: The Oct 29 Memo makes specific conclusions based upon a pre-defined set of mechanisms and analysis to prove the mechanisms are not occurring and thus mining activities are not affecting the private wells.

However, the defined "*only plausible hydrologic mechanisms*" (Oct 29 Memo, p. 1) do not reflect the physical circumstances associated with recharge from the "V" ditch.

Further, the use of a limited water quality data set to derive the conclusions about mechanism #3 appears arbitrary and not rigorous. Therefore, the Oct 29 Memo does not provide the "*only scientifically supportable conclusions.*" (Oct 29 Memo, p. 5) and the conclusions should not be viewed as appropriately conclusive.

October 30, 2014 Memo

The October 30, 2014 memorandum (Oct 30 Memo) lists the subject as *Comparison of Groundwater Elevations and Dewatering Volumes – Stillwell Mine Project* (see Attachment 4).

This two-page memorandum and associated graphic does not present any formal conclusions but states in its last sentence: "*The data on the attached figure and the discussion above demonstrate that pumping to the V-ditch has not historically maintained the water levels in wells to the east of the V-ditch during multi-year periods of reduced rainfall.*" (Oct 30 Memo, p. 2).

The Oct 30 Memo presents data regarding aggregate production, rainfall, volume of annual pumping to the "V" ditch, and groundwater elevations for MW-2, MW-3 and the Morton Well, and provides some comparative analysis.

Assessment: First, the Oct 30 Memo's last statement appears to admit that the Quarry is not in compliance with Condition #55 where that condition states: "*[t]he proposed "V" ditch...shall contain a sufficient amount of water in order to establish a groundwater mound (groundwater barrier) to maintain water levels in neighboring wells.*" (Condition #55).

Specifically, assessment of the Oct 30 Memo finds the following:

1. The aggregate production data for 2012 appears to be misstated. According to the records submitted by CEMEX to the California Office of Mine Reclamation (OMR), the governing division within the Department of Conservation, the following is the aggregate production data for 2006 through 2013. The Oct 30

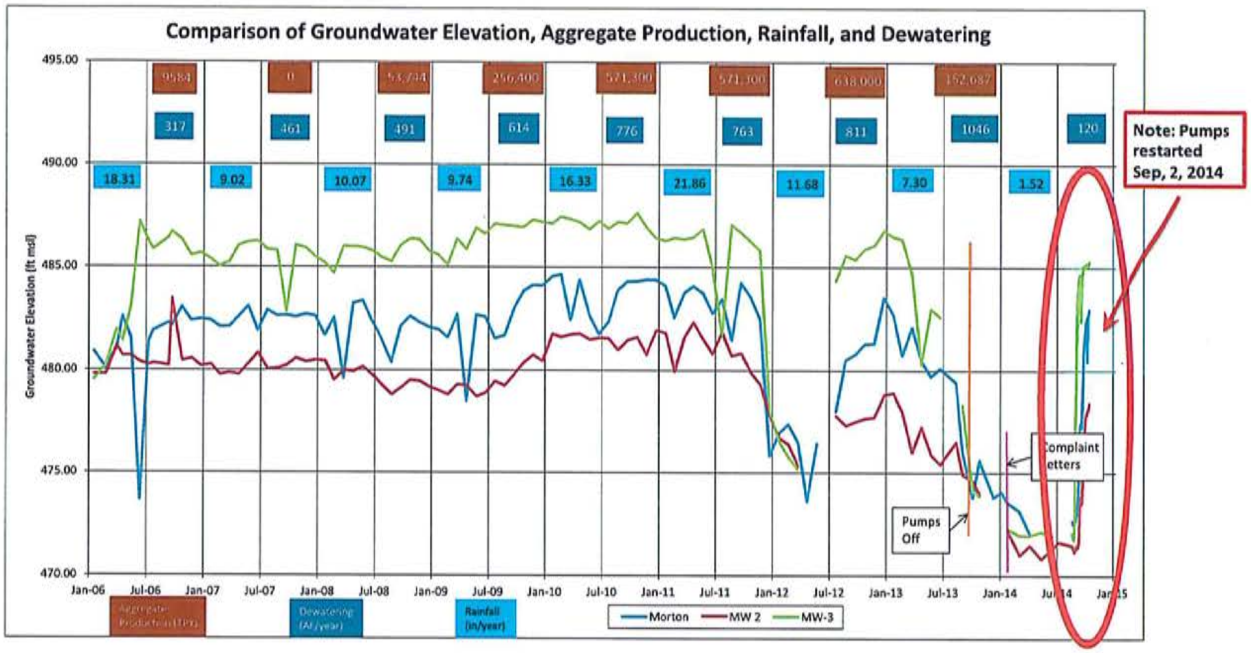
Memo's graphic indicates 2012 aggregate production to be 638,000 tons. The official submitted report shows only 638 tons.

Report Year	Reported Production (tons)
2006	9,584
2007	0
2008	53,744
2009	256,400
2010	571,300
2011	571,300
2012	638
2013	152,687

2. According to data provided by EMKO and documented in the original Peer Review Memo, the volume of water pumped to the "V" ditch in 2013 was only 774 acre-feet, not 1,046 acre-feet. As a result, the Oct 30 Memo's discussion comparing 2013 mine pit dewatering to other years is inaccurate. The Oct 30 Memo's statement "*despite the substantial increase in water volume being pumped to the V-ditch compared to prior years, the groundwater levels persistently declined from January 2013 through September 2013*," is misleading as there was not a substantial increase – there was a decrease.

Year	Reported Dewatering (acre-feet)
2006	421
2007	490
2008	494
2009	652
2010	795
2011	828
2012	812
2013	774

3. The Oct 30 Memo does not discuss the immediate recovery of groundwater elevations that are evident on the right-hand side of the graph. These elevation increases are directly related to restarting discharges to the "V" ditch on September 2, 2014. The figure below is from the Oct 30 Memo, with the right-hand data circled. The relevance of the immediate recovery of groundwater elevations in the monitoring wells and private wells appears to indicate an important correlation between pumping to the "V" ditch and the ability to "*maintain water levels in neighboring wells.*" (Condition #55).



4. The Oct 30 Memo appears to assert there is a correlation among the volume of dewatering, aggregate production, rainfall and groundwater elevations, yet none are defined nor are any readily drawn from the presented data. For instance, the volume of dewatering does not relate to the volume of aggregate production or rainfall quantities. In another example, groundwater elevations remain relatively stable from 2006 through 2011 even with significant variations in rainfall (e.g. 2007 had 9 inches and 2011 had nearly 22 inches while groundwater elevations only appear to vary by a few feet). The purpose of including some of this data is unclear.

5. As presented in the Peer Review Memo: "*...the current unprecedented drought condition is a primary contributing factor to current degraded groundwater conditions at the subject properties. But absent an understanding of the relationship of groundwater mounding to the upgradient groundwater elevations, CEMEX cannot be summarily excused from fault.*" (Peer Review Memo, p. 11). The drought is recognized to likely have an impact on local groundwater conditions, resulting in "*the groundwater levels persistently declined from January 2013 through September 2013.*" (Oct 30 Memo, p. 2). However, as amply evident with the data logger readings for the past two months, providing sufficient water to the "V" ditch does have a direct impact on groundwater elevations in the private wells and it is plausible that sufficient water was not being discharged to the "V" ditch during these months of 2013 – regardless of the drought conditions at that time.

Conclusions: The Oct 30 Memo attempts to demonstrate that groundwater levels declined significantly in 2013 regardless of a substantial increase in water being pumped to the "V" ditch. However, the basis for this assertion is data that is inconsistent with data provided by EMKO in August.

Furthermore, the graphic accompanying the memorandum provides several additional types of data with no discussion on their relevance or value to the analysis.

Finally, the memorandum does not discuss the apparent direct correlation between water discharged to the "V" ditch and the rapid recovery of groundwater elevations, as evidenced by the data included on the far right-hand side of the graphic. The most recent data logger readings add significantly to the overall assessment of relationships, as discussed more thoroughly later in this Final Memo.

Statewide Drought Context

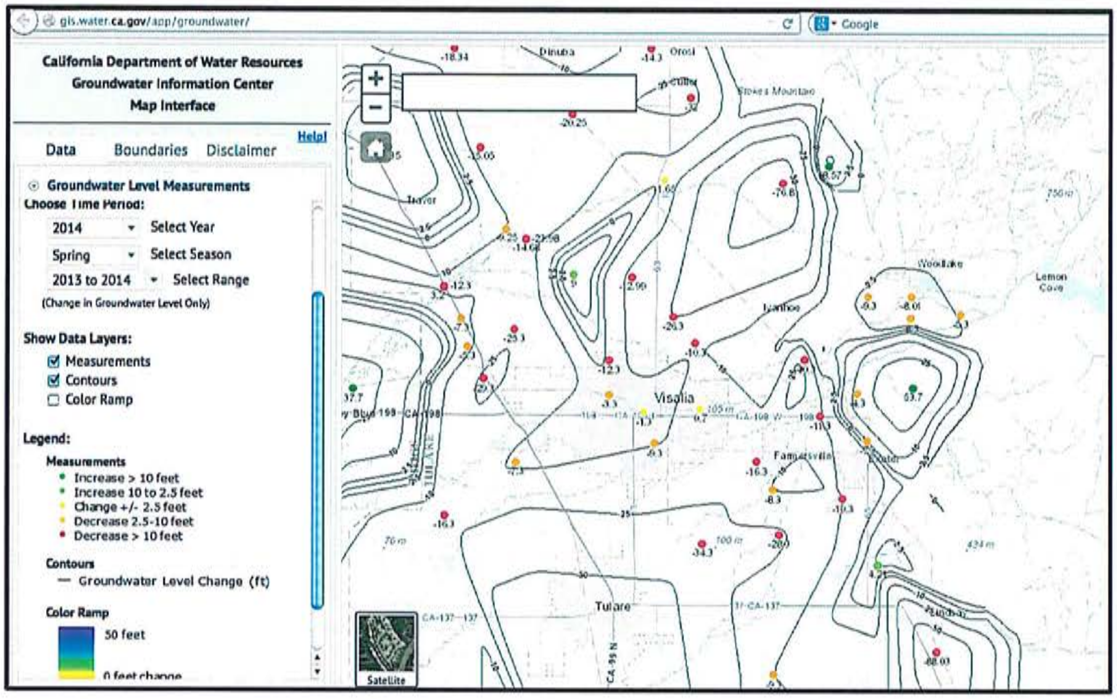
In several of the CEMEX documents and during discussions with the RMA, the unprecedented drought affecting all portions of California was referred to as a partial if not sole cause of the lowering of groundwater elevations in the private wells. For instance, CEMEX representatives have made reference to statements from state and local leaders about significant drops in groundwater elevations throughout the Central Valley.

While it is true that the current drought is unprecedented and causing hardship across California, the shallow groundwater conditions from which the private wells draw are isolated from the broader groundwater elevation concerns elsewhere in the Central Valley, and in particular, Tulare County.

In fact, as shown in the figure below copied from the Department of Water Resources Groundwater Information Center's Interactive Map,[3] the groundwater conditions near Lemon Cove have seen both increases and minor decreases in groundwater elevations between spring 2013 and spring 2014 (the most recent information available). In contrast, areas near Visalia and Tulare have seen more dramatic lowering in groundwater elevations over the past year.

As illustrated in the original 2002 technical report used to support the Quarry's EIR, "*[t]his information demonstrates that the groundwater within the shallow alluvial sediments is not in hydraulic communication with the bedrock aquifer and that the proposed project should not have any measurable impact on the deeper wells.*" (Hydrogeologic Data Evaluation Report, p. 14, EMKO, June 10, 2002).

[3] Accessed on November 26, 2014 at http://gis.water.ca.gov/app/groundwater/



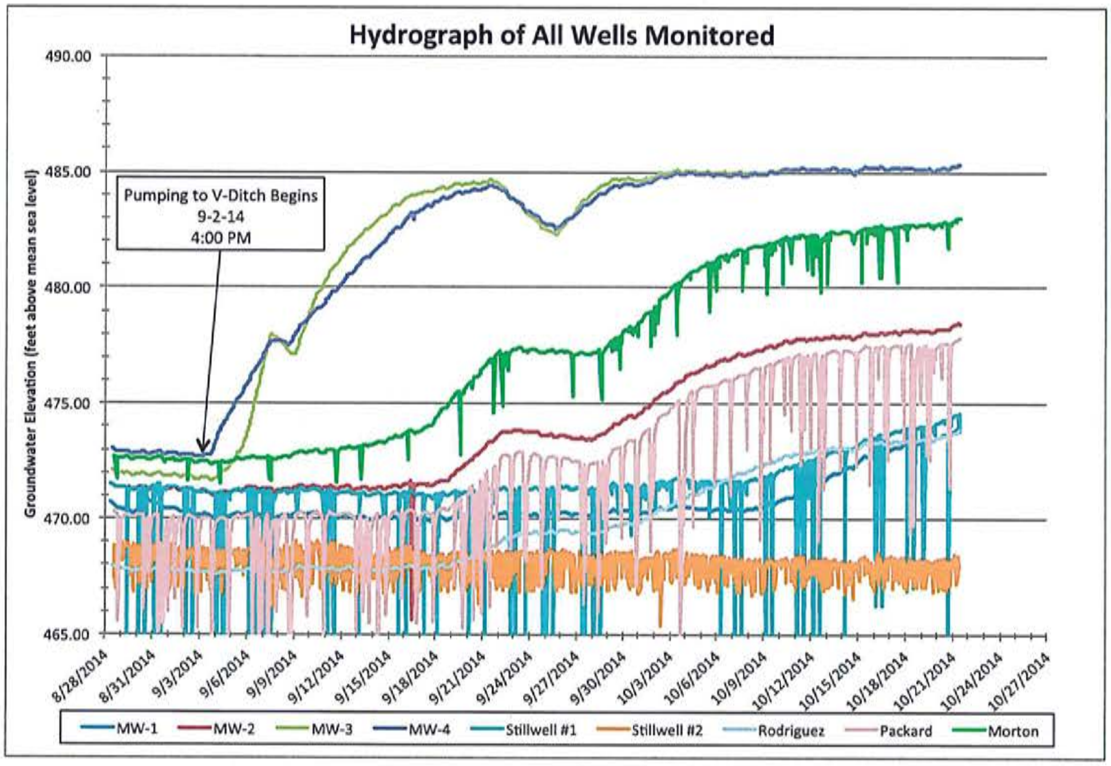
Thus, as recognized then and as apparent with the historic and current groundwater level data, the adjacent shallow wells are not affected by the conditions occurring in the deeper aquifers, especially portions of deep aquifers located well to the west of the Quarry.

Though this figure places the regional picture in context, this or other broader representations of the drought conditions do not represent the isolated shallow groundwater affected by the mining operations. Thus, while the drought is a very likely contributing factor to the localized conditions, the absence of water in the "V" ditch appears to also be a contributory cause of the adverse groundwater conditions experienced by the adjacent private wells over the past year.

Independent Analysis of Groundwater Elevation Data

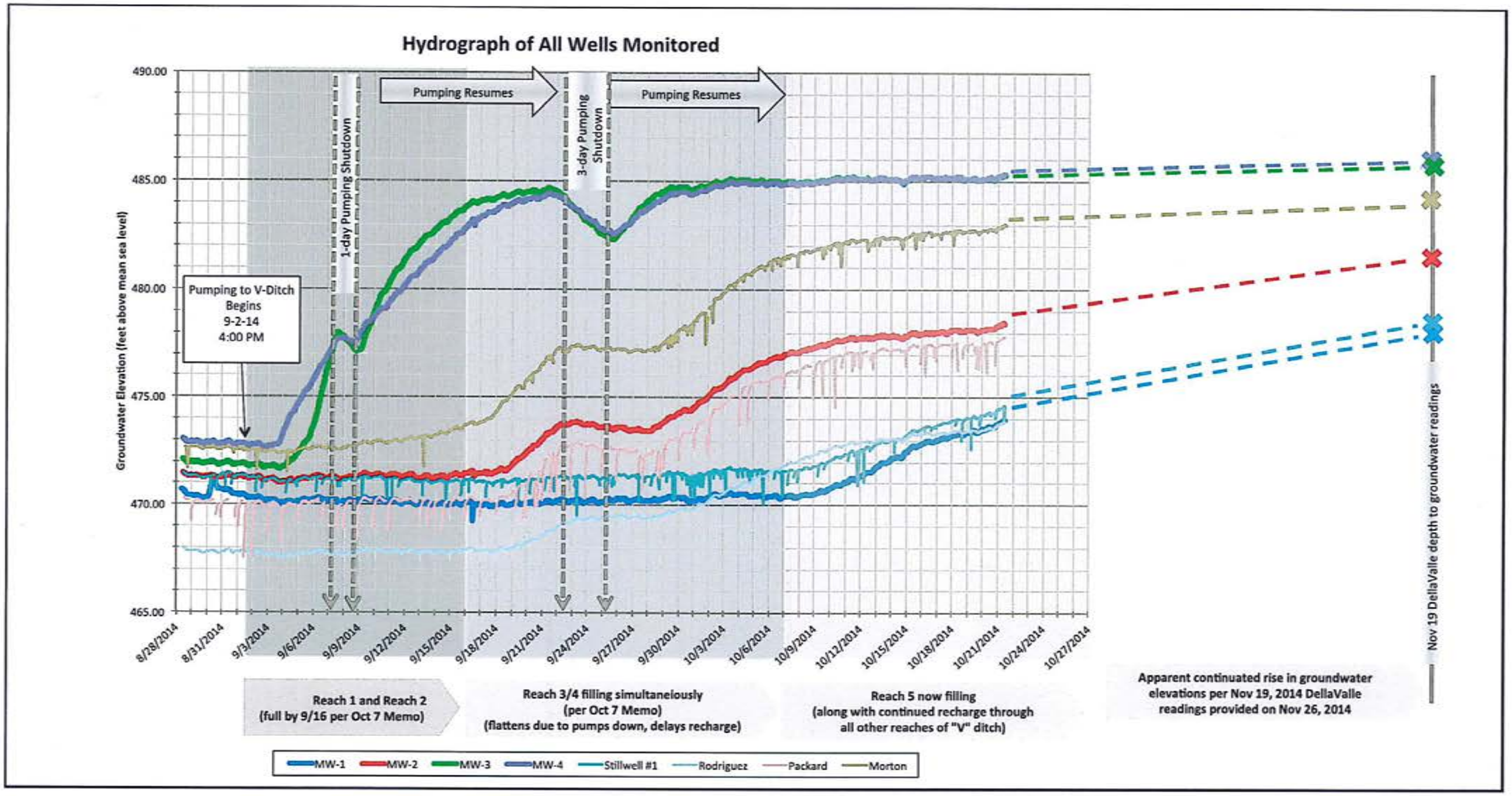
This portion of the Final Memo provides an independent analysis of the representative groundwater elevation data collected since CEMEX began discharging water to the "V" ditch again on September 2, 2014. This analysis is based upon data logger readings and once-per-month readings from DellaValle for November.

To begin, the data and charts provided by CEMEX were analyzed. The figure below was submitted by CEMEX representatives in late October 2014 as part of an Excel file documenting and graphing hourly data logger readings from August 28 through October 21, 2014. This data updated the hydrographs included with the Oct 7 Memo.



To make the data more understandable and to graphically demonstrate the timing of recharge in the "V" ditch reaches in relation to the steady rise in groundwater elevations, this Final Memo prepared a modified version of this hourly data (see following page).

Other than adding some additional graphics to accompany the Final Memo's analysis and discussion, hourly data logger readings for the majority of "low" conditions were removed for several private wells as these values represent when the well was operating and are not relevant to the overall understanding of the groundwater elevation on a daily basis.


Hydrograph of All Wells Monitored
Groundwater Elevation (feet above mean sea level)
490.00
485.00
480.00
475.00
470.00
465.00
8/28/2014
8/31/2014
9/3/2014
9/6/2014
9/9/2014
9/12/2014
9/15/2014
9/18/2014
9/21/2014
9/24/2014
9/27/2014
9/30/2014
10/3/2014
10/6/2014
10/9/2014
10/12/2014
10/15/2014
10/18/2014
10/21/2014
10/24/2014
10/27/2014
Pumping to V-Ditch Begins 9-2-14 4:00 PM
1-day Pumping Shutdown
Pumping Resumes
3-day Pumping Shutdown
Pumping Resumes
Reach 1 and Reach 2 (full by 9/16 per Oct 7 Memo)
Reach 3/4 filling simultaneiously (per Oct 7 Memo) (flattens due to pumps down, delays recharge)
Reach 5 now filling (along with continued recharge through all other reaches of "V" ditch)
Apparent continuated rise in groundwater elevations per Nov 19, 2014 DellaValle readings provided on Nov 26, 2014
Nov 19 DellaValle depth to groundwater readings
MW-1
MW-2
MW-3
MW-4
Stillwell #1
Rodriguez
Packard
Morton

These low readings only occurred once or twice daily, with recovery to the "high" value for the day within an hour or more of the low reading. Removing these values helps reduce the clutter and improves the reader's ability to review the steady upward trend in all groundwater elevations.

The Final Memo's graphic can be used to identify several key relationships between pumping to the "V" ditch and the rise in groundwater elevations. These are detailed as follows:

1. MW-4 shows an immediate response to the re-introduction of water into the "V" ditch, rising nearly one-foot per day between September 2 and September 16 (the Oct 7 Memo indicated Reach 1 and 2 of the "V" ditch were full as of this date). As indicated in the Oct 7 Memo (bottom of p. 2) "*MW-4, ... is located near the south end of the northern segment of the V-ditch.*" As further described in the Oct 7 Memo, "*[f]or most segments of the V-ditch, the water must rise to a depth of approximately 10 feet before entering a pipe that allows the water to flow to the next segment. The third and fourth segments, however, are connected by a pipe near the bottom of the V-ditch. Therefore, these two segments fill simultaneously.*" (Oct 7 Memo, p. 2). The segments are further described by length in the Oct 7 Memo and confirmed via visual inspection of aerial photographs (see earlier figure associated with the assessment of the Oct 7 Memo showing the reaches).

2. MW-3 shows similar response as MW-4, but with an initial delay in response of about 1 day. As described by EMKO: "*MW-3...is located near the middle of the second segment of the V-ditch...*" (Oct 7 Memo, p. 2/3). It would seem appropriate that a monitoring well associated with the second reach of the "V" ditch would see a similar response to a monitoring well in the first reach, once water fills the first reach and spills into the second.

3. As evident between September 7 and 8, pumping into the "V" ditch ceased for about 28 hours. The data logger readings show an immediate drop in the groundwater elevations in MW-3 and MW-4 in reaction to the stoppage of discharge. Beginning September 22 and lasting until the morning of September 25, a second stoppage in discharge occurred. MW-3 and MW-4 again showed a near immediate and very similar pattern in response. This response is indicative of the recharge benefits of the "V" ditch, as it demonstrates that water in the "V" ditch quickly absorbs into the soil and recharges the underlying groundwater.

4. Given the nearly immediate response in groundwater elevations in MW-4 and the above information, it seems readily apparent that MW-4 is located adjacent to the first reach of the "V" ditch. Likewise, the location of MW-3 appears to be within the second reach of the "V" ditch. This is contrary to the analysis provided in the

Oct 29 Memo, which indicates MW-3 is within the third reach of the "V" ditch, and much closer to the Morton well.

5. MW-2 appears to be located in the upper section of reach 5 of the "V" ditch. At this location, it would be expected to begin showing signs of recovery soon after reach three and reach four begin to fill – as it would likely reflect recharge from reach 4. When inspecting the start of MW-2's recovery, it is apparent that groundwater levels begin to rise within three to five days of water flowing into reach three and four (the timing of flow into reach three and four is based upon the Oct 7 Memo's statement that reach 1 and 2 were full as of September 16, thus would be spilling over into reach 3, which fills simultaneously with reach 4).

6. The Morton well is located near the upper end of reach four of the "V" ditch. This fourth reach fills simultaneously with the third reach, as presented by the Oct 7 Memo. The Morton well begins to show recovery around the time water was flowing into reach three and four, and several days prior to indications of recovery in MW-2.

7. The stoppage of discharge to the "V" ditch between September 22 and September 25 shows as a flattening of the groundwater elevations at the Morton well and MW-2 for several days. Within a few days of the restart, these wells again continued an upward trend in groundwater elevations. This reaction to the stoppage and related delay helps confirm the relationship between groundwater elevations and the presence of "sufficient" amounts of water in the "V" ditch, as required by Condition 55.

8. MW-3 and MW-4 begin to indicate an equilibrium condition has occurred just prior to the September 22 stoppage. After restarting, these monitoring wells continue to maintain an equilibrium through the last available data logger reading on October 21. The November 19 DellaValle measurements can be plotted to demonstrate that these wells continue to maintain a state of equilibrium.

9. MW-1 is located at the very end of the "V" ditch, and understandably is the last to see a response in groundwater elevations. This appears to occur around October 9, after reach three and four appear to see groundwater elevations flattening out – which indicates the groundwater in those reaches are nearing equilibrium.

10. Plotting the November DellaValle readings shows both MW-1 and MW-2 continuing to rise.

11. Plotting the November DellaValle readings shows the Morton well was nearly at an equilibrium as of the last available data logger reading on October 21. This "equilibrium" elevation is about 483 to 484 feet mean sea level (msl). This is

comparative to historic data for the Morton well that indicates the well routinely was between 480 feet msl and 485 feet msl for the period of 2006 through 2011.

12. The Packard well, indicated in the Oct 7 Memo to be adjacent to MW-2, tracks the recovery pattern of MW-2 nearly perfectly – further demonstrating a direct correlation between water discharged into the "V" ditch and resulting groundwater elevation conditions in both monitoring wells and private wells.

13. The Morton well, although located several hundred feet north of MW-2, also shows remarkable similarities to the recovery pattern in MW-2. As described earlier, this is likely due to the response in MW-2 from recharge occurring in reach 3 and 4 of the "V" ditch.

As seems readily apparent by the available 78 days of data logger and associated DellaValle groundwater elevation readings, there is a definitive relationship between the presences of sufficient water in the "V" ditch and the maintenance of groundwater elevations in neighboring wells.

As such, discharge to the "V" ditch – a required part of mining activities at the Quarry – has a direct influence on the conditions of groundwater in adjacent private wells.

The stoppage of discharge that began in September 2013 and continued for a year absolutely had an adverse effect on groundwater elevations in adjacent private wells and very likely exacerbated the affects of the current drought on local groundwater conditions. The Quarry cannot excuse itself from fault or factually conclude "*mining activities have not affect the private wells.*" (Oct 29 Memo, p. 5).

Conclusions

As detailed in the sections above, a direct correlation exists between the discharge of water into the "V" ditch and the maintenance of groundwater elevations in neighboring wells. Lack of "*a sufficient amount of water in order to establish a groundwater mound to maintain water levels*" (Condition 55), beginning in September 2013 and lasting until September 2014, had a primary adverse impact on groundwater elevations at neighboring wells.

As stated in the original Report prepared by EMKO "*[t]he available data and documentation demonstrate that the concerns identified in the letters received in late January 2014 are not caused by mining activities.*" (Report, p. 8). The original Peer Review Memo concluded "*[t]hough the conclusion may still be accurate if it were to be reassessed with all relevant facts available, making such conclusions absent them is without merit.*" (Peer Review Memo, p. 11).

As illustrated with the extensive data logger readings, a reassessment with the relevant facts supports the findings of the Peer Review Memo and reasserts that CEMEX mining activities definitely are a cause of the concerns identified in the letters.

Recommendations

To help assure CEMEX mining activities do not cause additional problems with groundwater elevations in the neighboring private wells, RMA could consider the following recommendations:

1. As directed by Condition 46 and Condition 48, require full compliance with the reporting detailed in the 2002 RMC Pacific Materials Stillwell Project Groundwater Monitoring Program (GMP), prepared by EMKO. Compliance would include preparing all necessary reports and analyses and submitting to the RMA on a timely and routine basis.

2. Add a meter on the discharge line that fills the "V" ditch so that accurate information regarding the destination of mine dewatering is understood and verifiable. As discussed in the Peer Review Memo and the Response Memo (see **Appendix A**), simply using the power records cannot be relied upon as proving only flow to the "V" ditch as other use of power and other destinations for water are plausible, yet never explained. [As an added example, Condition 16 requires all loads to be covered or wet down to minimize dust. Condition 6 requires haul roads to be watered regularly. Is water from the mine pit used to satisfy this requirement and, if so, is pumping for these accounted for separately than the provided power records (e.g. is a water truck routinely filled with an on-site pump)?]

3. Clarify the locations of all monitoring wells and private wells associated with this effort and correct all maps as necessary.

4. Evaluate overall operation of the Quarry with regard to Condition 3 to determine if reclamation actions should be undertaken for any completed phases of the Quarry.

5. Modify Condition 55 to clarify that water placed into the "V" ditch can be provided from sources other than mine pit dewatering. As stated in the concluding paragraph of Section 4.4.2 of the Quarry EIR, "*[a]lternatively, water from another source will be pumped to the trench.*"

6. Using the recently proven relationships between water discharged to the "V" ditch and related responses in groundwater elevations, re-evaluate the current reclamation plan to assure continued maintenance of groundwater elevations, as required by Condition 52. The current reclamation plan identifies two lakes with

a connecting channel and associated weir structures designed to maintain natural groundwater elevations. As presented in the 2002 Hydrogeologic Data Evaluation Report, prepared by EMKO, the "east lake" would have a water elevation of 483.5 feet msl and the "west lake" would have a water elevation of 481.5 feet msl. For comparison, as presented in the graphic representation of data logger and DellaValle readings, the Morton well is at 483.95 feet msl as of November 19, 2014.

Section 1 – Part 2

Attachments

1. August 26, 2014 letters from Mitchell Chadwick to Mr. Morton, Mr. Cloud, Mr. Packard, and Mr. and Mrs. Rodriguez offering data loggers for resident wells

2. October 7, 2014, EMKO Memorandum - Status of Water Level Monitoring: Data Collected Through September 16, 2014 - Stillwell Mine Project

3. October 29, 2014, EMKO Memorandum – Effects of Mining Activities on Groundwater – CEMEX Stillwell Mine

4. October 30, 2014, EMKO Memorandum – Comparison of Groundwater Elevations and Dewatering Volumes – Stillwell Mine Project

5. DellaValle Laboratory, Inc. – CEMEX Location Map #3 (MW1, MW2, MW3, MW4, Stillwell, Mills, Morton, Cairnes)

6. August 25 ,2014, EMKO Memorandum – Water Quality Data – CEMEX Stillwell Mine

Attachment 1

[August 26, 2014 letters from Mitchell Chadwick to Mr. Morton, Mr. Cloud, Mr. Packard, and Mr. and Mrs. Rodriguez offering data loggers for resident wells]

MITCHELL
CHADWICK

Patrick G. Mitchell
pmitchell@mitchellchadwick.com
916-462-8887
916-788-0290 Fax

August 26, 2014

VIA FEDEX

Robert Morton
33511 Sierra Drive
Lemon Cove, CA 93244

Re: Installation of Pressure Transducers and Dataloggers for Well Monitoring

Dear Mr. Morton:

My client Cemex Construction Materials Pacific LLC ("CEMEX") has notified Tulare County Resource Management Agency ("RMA") that it intends to begin dewatering the Stillwell mine beginning on or around September 2, 2014 and discharge the pumped water to the adjacent V-ditch. To provide an accurate analysis of the effects of dewatering and filling the V-ditch on groundwater levels surrounding the Stillwell property, CEMEX will be installing downhole pressure transducers and dataloggers in its four monitoring wells adjacent to the V-ditch.

CEMEX is also willing to install a downhole pressure transducer and datalogger in the four private wells for which complaints alleging reduced water levels were received by RMA in January 2014. If installed, this downhole pressure transducer and datalogger will monitor the effects of filling the V-ditch on the water levels in your well. This will be done at CEMEX's expense and at no cost to you. Collection of this information will assist County RMA staff in further evaluating groundwater conditions in the Stillwell mine area and the potential influences of the V-ditch on neighboring wells.

The downhole pressure transducer and datalogger that would be installed is a 7/8 inch-diameter metal rod with pressure ports on the end and internal electronic components to measure and record water levels. It is suspended in a well using a stainless steel wire and a nylon rope to recover the device. The photographs in the attached Exhibit A show examples of the type of pressure transducer and datalogger to be installed in the wells. The water level data will be downloaded from the datalogger onto a portable computer. When the water levels are downloaded, they will be immediately provided to you as the well owner, RMA staff, and the County's peer review consultant on compact disk. The pressure transducer and datalogger will not interfere with any well pump or its operation.

CEMEX plans to install the pressure transducers and dataloggers in its own monitoring wells on Thursday, August 28, 2014. Because the equipment must be installed in your well prior to placing water in the V-ditch to ensure scientifically meaningful readings, **CEMEX must receive permission from you by no later than 5:00 PM on Friday August 29, 2014.** If we receive notice from you prior to 9:00 AM on Thursday August 28th, CEMEX will install the equipment that same day when it installs the CEMEX monitoring well equipment.

Please notify my associate Allison Reynolds regarding your willingness to have a pressure transducer and datalogger installed in your well as soon as possible. Ms. Reynolds can be reached by phone at (916) 462-8801 or by email at areynolds@mitchellchadwick.com and is available to answer any questions you may have.

Thank you for your consideration of this request.

Best regards,

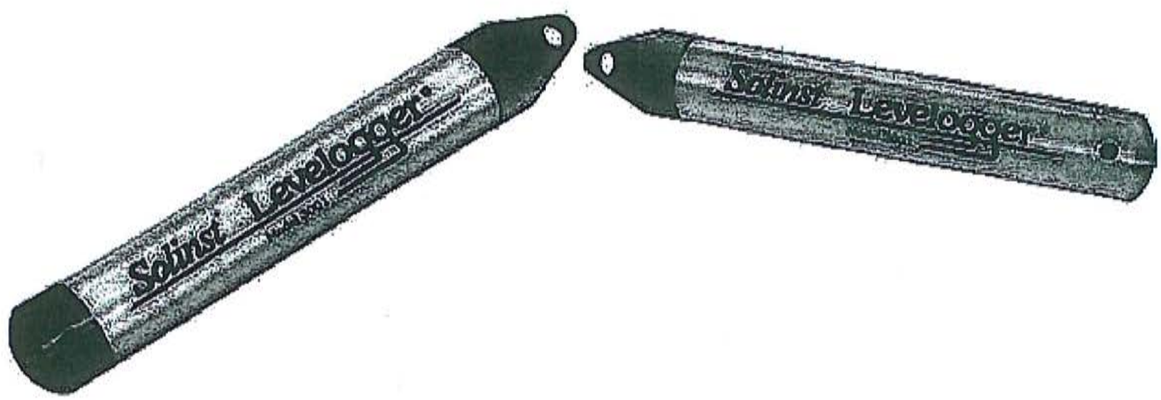
MITCHELL CHADWICK LLP

Patrick G. Mitchell

PGM:de

cc: Chuck Przybylski, Tulare County RMA
Michael Spata, Tulare County RMA
Tom Cairns, Sierra Chief Quality Western Products

Exhibit A



Pressure transducer and datalogger examples

MITCHELL
CHADWICK

Patrick G. Mitchell
pmitchell@mitchellchadwick.com
916-462-8887
916-788-0290 Fax

August 26, 2014

VIA FEDEX

Orville Cloud
33481 Sierra Drive
Lemon Cove, CA 93244

Re: Installation of Pressure Transducers and Dataloggers for Well Monitoring

Dear Mr. Cloud:

My client Cemex Construction Materials Pacific LLC ("CEMEX") has notified Tulare County Resource Management Agency ("RMA") that it intends to begin dewatering the Stillwell mine beginning on or around September 2, 2014 and discharge the pumped water to the adjacent V-ditch. To provide an accurate analysis of the effects of dewatering and filling the V-ditch on groundwater levels surrounding the Stillwell property, CEMEX will be installing downhole pressure transducers and dataloggers in its four monitoring wells adjacent to the V-ditch.

CEMEX is also willing to install a downhole pressure transducer and datalogger in the four private wells for which complaints alleging reduced water levels were received by RMA in January 2014. If installed, this downhole pressure transducer and datalogger will monitor the effects of filling the V-ditch on the water levels in your well. This will be done at CEMEX's expense and at no cost to you. Collection of this information will assist County RMA staff in further evaluating groundwater conditions in the Stillwell mine area and the potential influences of the V-ditch on neighboring wells.

The downhole pressure transducer and datalogger that would be installed is a 7/8 inch-diameter metal rod with pressure ports on the end and internal electronic components to measure and record water levels. It is suspended in a well using a stainless steel wire and a nylon rope to recover the device. The photographs in the attached Exhibit A show examples of the type of pressure transducer and datalogger to be installed in the wells. The water level data will be downloaded from the datalogger onto a portable computer. When the water levels are downloaded, they will be immediately provided to you as the well owner, RMA staff, and the County's peer review consultant on compact disk. The pressure transducer and datalogger will not interfere with any well pump or its operation.

CEMEX plans to install the pressure transducers and dataloggers in its own monitoring wells on Thursday, August 28, 2014. Because the equipment must be installed in your well prior to placing water in the V-ditch to ensure scientifically meaningful readings, **CEMEX must receive permission from you by no later than 5:00 PM on Friday August 29, 2014.** If we receive notice from you prior to 9:00 AM on Thursday August 28th, CEMEX will install the equipment that same day when it installs the CEMEX monitoring well equipment.

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Thank you for your consideration of this request.

Best regards,

MITCHELL CHADWICK LLP

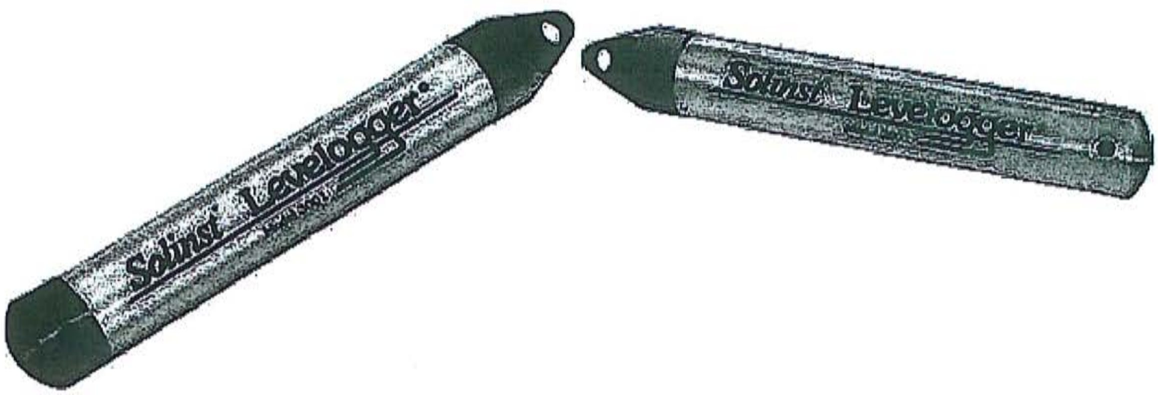
for

Patrick G. Mitchell

PGM:de

cc: Chuck Przybylski, Tulare County RMA
Michael Spata, Tulare County RMA
Tom Cairns, Sierra Chief Quality Western Products

Exhibit A



Pressure transducer and datalogger examples

MITCHELL CHADWICK

Patrick G. Mitchell
pmitchell@mitchellchadwick.com
916-462-8887
916-788-0290 Fax

August 26, 2014

VIA FEDEX

Joshua Packard
33511 ½ Sierra Drive
Lemon Cove, CA 93244

Re: Installation of Pressure Transducers and Dataloggers for Well Monitoring

Dear Mr. Packard:

My client Cemex Construction Materials Pacific LLC ("CEMEX") has notified Tulare County Resource Management Agency ("RMA") that it intends to begin dewatering the Stillwell mine beginning on or around September 2, 2014 and discharge the pumped water to the adjacent V-ditch. To provide an accurate analysis of the effects of dewatering and filling the V-ditch on groundwater levels surrounding the Stillwell property, CEMEX will be installing downhole pressure transducers and dataloggers in its four monitoring wells adjacent to the V-ditch.

CEMEX is also willing to install a downhole pressure transducer and datalogger in the four private wells for which complaints alleging reduced water levels were received by RMA in January 2014. If installed, this downhole pressure transducer and datalogger will monitor the effects of filling the V-ditch on the water levels in your well. This will be done at CEMEX's expense and at no cost to you. Collection of this information will assist County RMA staff in further evaluating groundwater conditions in the Stillwell mine area and the potential influences of the V-ditch on neighboring wells.

The downhole pressure transducer and datalogger that would be installed is a 7/8 inch-diameter metal rod with pressure ports on the end and internal electronic components to measure and record water levels. It is suspended in a well using a stainless steel wire and a nylon rope to recover the device. The photographs in the attached Exhibit A show examples of the type of pressure transducer and datalogger to be installed in the wells. The water level data will be downloaded from the datalogger onto a portable computer. When the water levels are downloaded, they will be immediately provided to you as the well owner, RMA staff, and the County's peer review consultant on compact disk. The pressure transducer and datalogger will not interfere with any well pump or its operation.

3001 Lava Ridge Court, Suite 120 - Roseville, CA 95661 • Ph. 916.462.8888 • Fax 916.788.0290 • www.mitchellchadwick.com

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Thank you for your consideration of this request.

Best regards,

MITCHELL CHADWICK LLP

for

Patrick G. Mitchell

PGM:de

cc: Chuck Przybylski, Tulare County RMA
Michael Spata, Tulare County RMA
Tom Cairns, Sierra Chief Quality Western Products

Exhibit A

Pressure transducer and datalogger examples

MITCHELL CHADWICK

Patrick G. Mitchell
pmitchell@mitchellchadwick.com
916-462-8887
916-788-0290 Fax

August 26, 2014

VIA FEDEX

Maria and Elias Rodriguez
33513 Sierra Drive #A
Lemon Cove, CA 93244

Re: Installation of Pressure Transducers and Dataloggers for Well Monitoring

Dear Mr. and Mrs. Rodriguez:

My client Cemex Construction Materials Pacific LLC ("CEMEX") has notified Tulare County Resource Management Agency ("RMA") that it intends to begin dewatering the Stillwell mine beginning on or around September 2, 2014 and discharge the pumped water to the adjacent V-ditch. To provide an accurate analysis of the effects of dewatering and filling the V-ditch on groundwater levels surrounding the Stillwell property, CEMEX will be installing downhole pressure transducers and dataloggers in its four monitoring wells adjacent to the V-ditch.

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{00016557;1 }

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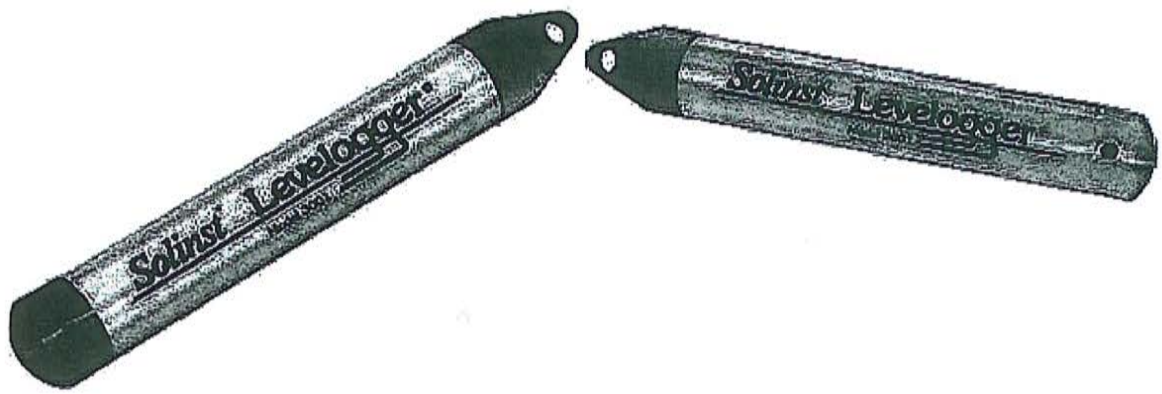
Tom Cairns, Sierra Chief Quality Western Products

Exhibit A



Pressure transducer and datalogger examples

{00016557;1 }

Attachment 2

[October 7, 2014, EMKO Memorandum - Status of Water Level Monitoring: Data Collected Through September 16, 2014 – Stillwell Mine Project]

EMKO Environmental, Inc.
551 Lakecrest Dr.
El Dorado Hills, CA 95762-3772
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akopania@sbcglobal.net

MEMORANDUM

October 7, 2014

To: Gordon Brown
Ron Wilson
Pete LoCastro

CC: Pat Mitchell
Allison Reynolds

From: Andy Kopania

Subject: Status of Water Level Monitoring: Data Collected Through September 16, 2014

Stillwell Mine Project

This Technical Memorandum provides a summary and brief interpretation of the current status of the water level monitoring occurring at the Stillwell Mine Project Site based on well monitoring data collected from August 28, 2014 to September 16, 2014.

On August 28, 2014, dataloggers were installed in nine wells in the vicinity of the Stillwell Mine. These wells include the four CEMEX monitoring wells located along the V-ditch (MW-1 through MW-4), a shallow livestock watering well on the Stillwell property located to the southwest of the current mine excavation (Stillwell #2), the well located at the rental house owned by Dave Stillwell (Stillwell #1), and the Rodriguez, Packard, and Morton domestic wells[1]. The well locations are shown on the attached *Map 1. Stillwell Quarry Area with Hydrographs from Wells Equipped with Dataloggers – August 28, 2014 to September 16, 2014.*

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Pumping from the mine excavation began at approximately 4 PM on September 2, 2014, with the water being piped to the northern part of the V-ditch. According to Pete LoCastro of CEMEX, the pump shut down on Sunday, September 7 due to problems with the float switches. Based on the water level data, the pump was off for approximately 24 hours. A meter installed on the discharge pipe by CEMEX indicates

[1] Although dataloggers were also initially programmed for installation in the Cloud and Cairns wells, the instruments were not installed in these two wells. Mr. Cloud informed us that he was now being supplied by a deep well and no longer had water issues. An extra datalogger was brought to the site during the field mobilization in case a last-minute request was made by Mr. Cairns to install a datalogger in his well. No such request was made.

that the pumping rate has consistently averaged about 990 gallons per minute when the pump is operating. This pumping rate is equivalent to about 4.4 acre-feet of water per day.

The V-ditch has five segments that are separated by soil berms within the ditch. The northern segment is approximately 1,050 feet long, the second segment is approximately 1,100 feet long, the third segment is approximately 275 feet long, the fourth segment is approximately 550 feet long, and the fifth segment, at the south end of the V-ditch, is approximately 825 feet long. For most segments of the V-ditch, the water must rise to a depth of approximately 10 feet before entering a pipe that allows the water to flow to the next segment. The third and fourth segments, however, are connected by a pipe near the bottom of the V-ditch. Therefore, these two segments fill simultaneously.

At a height of 10 feet above the bottom, the V-ditch is approximately 25 feet wide. Given these dimensions and the segment lengths described above, the actual volumes of water that can be held in each segment are approximately:

- Segment 1 (north end): 3.0 acre-feet;
- Segment 2: 3.2 acre-feet;
- Segment 3: 0.8 acre-feet;
- Segment 4: 1.6 acre-feet; and
- Segment 5 (south end): 2.4 acre-feet.

At these volumes and the measured pumping rate of about 4.4 acre-feet per day, the entire V-ditch would fill with water in 2.5 days if there was no percolation to the subsurface. However, on September 16, 2014, only the first two segments of the V-ditch were full. At the time of this observation, approximately 35 acre-feet of water had been pumped into the V-ditch, while only 6.2 acre-feet were stored in the ditch. These values indicate that approximately 29 acre-feet of water had percolated from the V-ditch to the shallow aquifer during that two-week period. The average percolation rate during this period was approximately one acre-foot per day per 1,000 linear feet of ditch.

Map 1 shows the hydrographs from the above referenced wells that are currently being monitored with dataloggers. The data are for the period from August 28, 2014 to September 16, 2014. The water levels for six of the nine wells monitored with dataloggers were very stable during this time. In three of the wells, however, water levels increased.[2] In MW-4, which is located near the south end of the northern segment of the V-ditch, water levels increased almost 10 feet from September 3, 2014 to September 16, 2014. In MW-3, which is located near the middle of the second segment

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2 According to monthly measurements made by Dellavalle Laboratory, Inc. on September 16, 2014, the water level in the Cairns well had increased approximately 4.3 feet since August 2014. The Cairns well is located near the south end of the northern segment of the V-ditch, as shown on *Map1*.

of the V-ditch, water levels increased more than 11 feet from September 4, 2014 to September 16, 2014. The 24-hour period where the pumping to the V-ditch was not occurring is readily apparent on the hydrographs for MW-4 and MW-3. In the Morton well, which is located approximately 250 feet south of the south end of the second segment of the V-ditch, water levels increased by slightly more than one foot from September 8, 2014 to September 16, 2014.

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The attached *Figure 8 Groundwater Contours – September 2014* shows the effect of the large amount of recharge that occurred from the first two segments of the V-ditch during the first two weeks of pumping. A large groundwater mound has formed under the V-ditch, extending from the Cairns well to MW-3. The steep groundwater gradient between MW-3 and the Morton well, shown by the tight spacing of the contours between these two well locations, indicates the presence of a large recharge cone beneath the first two segments of the V-ditch.

The attached *Figure 1 Conceptual Hydrogeologic Cross Section* presents a generalized interpretation of the conditions in the area of the V-ditch during this period of initial pumping from the mine excavation. During the initial pumping period, hydrogeologic conditions are very transient because of the time it takes to fill each segment of the V-ditch, the time required to drawdown and fully dewater the mine excavation, and the resulting variations that occur in the groundwater gradient. For example, during the initial pumping period, the recharge rate in the segment(s) of the V-ditch that contain water is very high because all of the water pumped from the mine excavation is percolating into the subsurface from only part of the V-ditch. As shown in *Figure 1 Conceptual Hydrogeologic Cross Section,* the initial recharge cone has relatively steep boundaries, consistent with the steep gradient shown between MW-3 and the Morton well on *Figure 8 Groundwater Contours – September 2014.*

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Over time, the recharge rate per length along the V-ditch will decrease as water enters each additional segment of the ditch. Based on the dimensions and pumping rate discussed above, once all four segments of the V-ditch are filled, the recharge rate per length of ditch will decrease by 35 percent, to about 0.95 acre-feet per day per 1,000 linear feet of ditch.

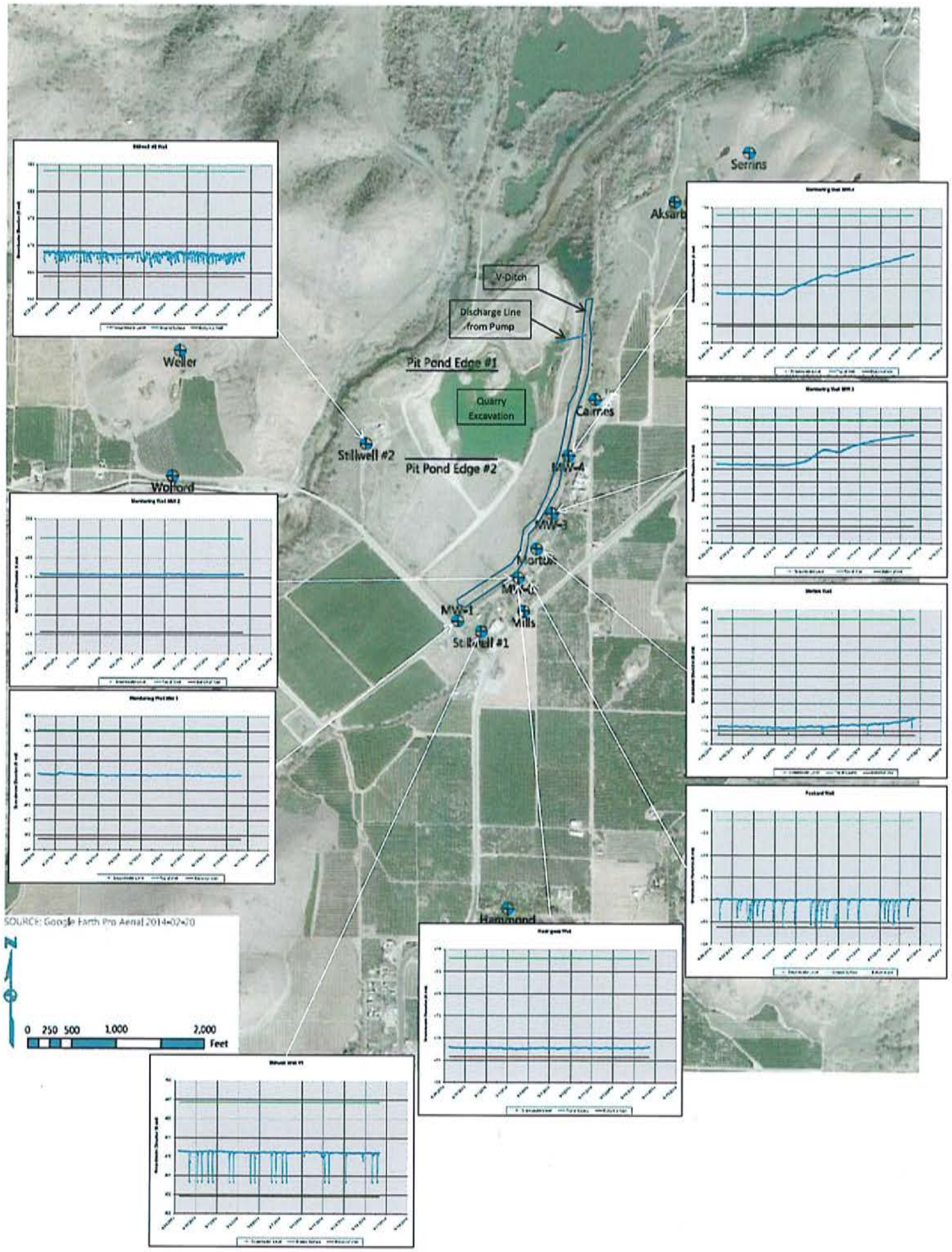
In addition, the horizontal hydraulic gradient (i.e. the slope of the groundwater surface) between the area of the V-ditch and the mine excavation will become steeper in comparison to the pre-pumping groundwater surface, for two reasons. The first reason is that the water levels under the V-ditch are rising due to the recharge. The second reason is that the water level within the mine excavation is being lowered due to the dewatering. Once all of the segments of the V-ditch are filled with water, and the water level in the mine approaches the bottom of the excavation, then the hydraulic gradient will stabilize. The equilibrium groundwater surface, as shown on *Figure 1 Conceptual Hydrogeologic Cross Section*, will be steeper in the area between the V-ditch and the mine excavation. The steeper groundwater surface will cause water to flow away from the area of the V-ditch at a faster rate than it was prior to the restart of pumping. On the opposite side of the V-ditch, however, the gradient should become flatter due to the mounding effect of the recharge from the V-ditch.

As illustrated on *Figure 1 Conceptual Hydrogeologic Cross Section*, the decrease in unit recharge rate along the V-ditch and the steeper horizontal hydraulic gradient along the equilibrium groundwater surface could result in a decline in water levels, compared to those observed in mid-September 2014, in the wells located closest to the V-ditch, such as CEMEX monitoring wells MW-3 and MW-4, while potentially causing a small increase in the water levels in the private wells located slightly farther from the V-ditch.

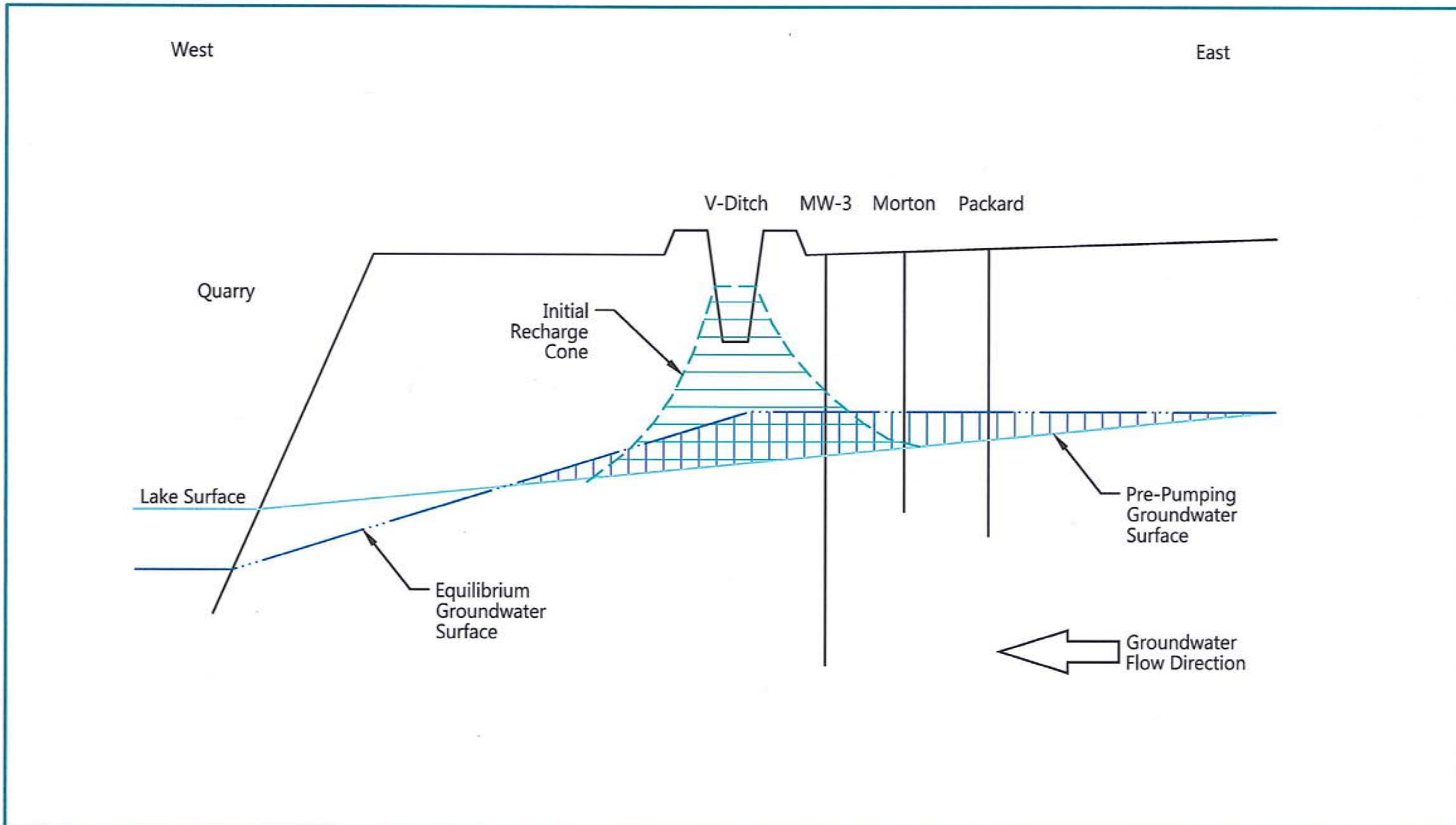
Over time, the initial recharge cone will likely flatten, or deflate, as the equilibrium groundwater surface shown on *Figure 1 Conceptual Hydrogeologic Cross Section* develops. The groundwater contour maps previously prepared for the Stillwell Mine and discussed in my August 22, 2014 Groundwater Elevation Data, Hydrographs, and Contour Maps Memorandum show that from July 2006 through at least January 2013, pumping to the V-ditch did not create a groundwater mound[3] similar to that observed on *Figure 8 Groundwater Contours – September 2014*. Thus, it is likely that the mound observed in the September 2014 data is a result of the transient conditions during this initial pumping period discussed above and will attenuate over time. It is uncertain how long it will take for each segment of the V-ditch to fill and to reach equilibrium conditions in the subsurface. However, the data from the seven-plus year period when the mine was being dewatered support the interpretation presented above.

The water levels from the nine wells currently being monitored with dataloggers will be downloaded approximately every six weeks. The data will be evaluated and discussed in a technical memorandum similar to this document after each download. It is expected that monitoring using the dataloggers will continue at least until equilibrium conditions develop in each well. In addition, monthly measurement of water levels and annual water-quality testing by Dellavalle Laboratory, Inc. should continue in accordance with the Conditions of Approval.

3 While the data indicate that a classic "mound" did not develop between 2006 and 2013, it is likely that the recharge from the V-ditch modified the groundwater surface by creating a small "bulge" similar to that shown on *Figure 1 Conceptual Hydrogeologic Cross Section* between the pre-pumping groundwater surface and the equilibrium groundwater surface beneath the V-ditch. While this "bulge" does not result in a reversal of the groundwater flow toward the east (as it does on *Figure 8 Groundwater Contours – September 2014*), it does flatten the gradient and allow water from upgradient (east) of the private wells to be retained on the east side of the V-ditch. This behavior is supported by the groundwater chemistry data, which show that the upgradient private wells contain high levels of nitrate but the water pumped from the mine to the V-ditch contains little or no nitrate. Thus, the water that percolates to the shallow aquifer from the V-ditch does not reach the private wells.



Map 1. Stillwell Quarry area with hydrographs from wells equipped with dataloggers – August 28, 2014 to September 16, 2014. Dewatering of the Quarry began September 2, 2014 at 4:00 PM.



SOURCE: EMKO Environmental.

NOTES:

1. Comparison of pre-pumping groundwater surface with the initial recharge cone and the long-term equilibrium groundwater surface. CEMEX Stillwell Quarry. Tulare, California.

0 250 500 1,000 Feet

EMKO Environmental, Inc.

Conceptual Hydrogeologic Cross Section

STILLWELL QUARRY

Figure 1

Attachment 3

[October 29, 2014, EMKO Memorandum – Effects of Mining Activities on Groundwater – CEMEX Stillwell Mine]

EMKO Environmental, Inc.
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El Dorado Hills, CA 95762-3772
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akopania@sbcglobal.net

TECHNICAL MEMORANDUM

October 29, 2014

To: Gordon Brown
Ronald Wilson
Pete LoCastro

Cc: Pat Mitchell
Allison Reynolds

From: Andy Kopania

Subject: Effects of Mining Activities on Groundwater
CEMEX Stillwell Mine

As stated in Condition of Approval No. 49 for the CEMEX Stillwell Mine, if a complaint from a well owner is received by the Tulare County Resource Management Agency (RMA) regarding the water level, yield, or water quality in an existing well, the RMA shall request a report from a licensed hydrogeologist. Such report is to evaluate whether "a significant problem... [is] ...caused by *mining activities*..." (emphasis added). For wells adjacent to the CEMEX Stillwell mine, the following are the only plausible hydrologic mechanisms by which mining activities could affect water level or well yield[1] in neighboring private wells:

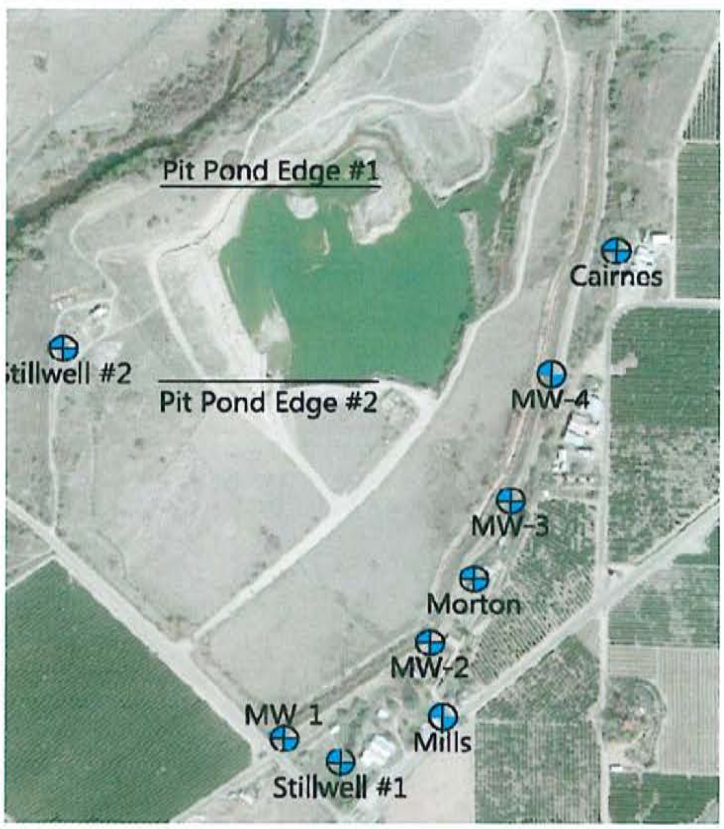
1. Pumping to dewater the mine could lower the water table between the excavation and the neighboring private wells, drawing water into the mine and away from the private wells;
2. The open quarry excavation, even in the absence of dewatering, could alter the groundwater contours and pull water away from the neighboring private wells and into the mine excavation[2]; or
3. The mine pit, even in the absence of dewatering, could alter the groundwater contours such that flow of water from the area upgradient of the private wells is diverted into the excavation and away from the private wells.

Each of these potential mechanisms can be evaluated based on the available water-level and water-quality data that have been collected over the past decade or

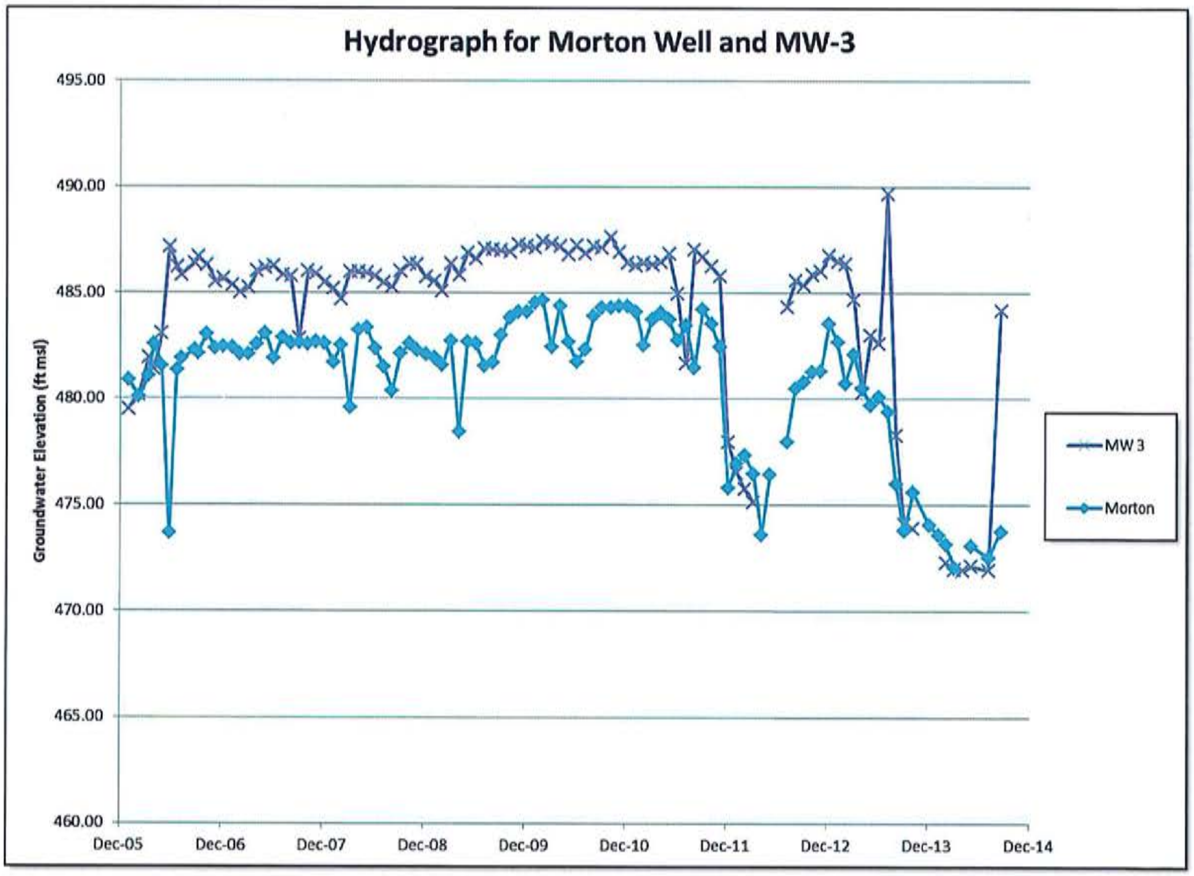
[1] The January 31, 2014 complaints from the neighbors do not allege any water quality issues related to the mine.
[2] This is sometimes referred to as "lake leveling", as discussed in Impact 4.4-5 of the 2002 EIR.

more at the Stillwell site.

For mechanism #1 or #2 to occur, the groundwater surface must slope downward from the private wells to the excavation. The four wells for which a complaint regarding water level or yield has been received (Morton, Packard, Rodriguez, and Cloud) are all located along the groundwater flow gradient, which trends from northeast to southwest. Of these four wells, the closest to the existing mine excavation is the Morton well. The location of the Morton well relative to the mine is shown on the map below. For groundwater to flow from the area of the Morton well to the mine excavation, the water level in the Morton well must be consistently higher than the water level in any wells located between the mine excavation and the Morton well. As shown on the map below, CEMEX monitoring well MW-3 is located between the Morton well and the existing mine. Thus, for the mine to be drawing water away from the area of the Morton well, the groundwater elevation in monitoring well MW-3 would need to be consistently *lower* than the water level in the Morton well.



The hydrograph below shows the groundwater elevation in the Morton well and MW-3 since 2006. With only a few short-term exceptions, the water level in MW-3 is consistently *higher* than the water level in the Morton well, typically by several feet. When the water level in MW-3 is lower than that in the Morton well, the difference is typically less than one to two feet and this condition only occurs for periods of two to three months.[3] Based on the aquifer parameters and groundwater conditions identified in Appendix C of the 2002 EIR, groundwater in the vicinity of the Stillwell mine moves approximately 20 feet per month under average conditions. The distance between the Morton well and the mine excavation is more than 1,000 feet. Therefore, it would take over 50 months for groundwater to flow from the Morton well to the mine excavation if the water levels in the Morton well were consistently higher than the water levels in MW-3. As shown on the hydrograph below, however, the predominant groundwater conditions prevent this from occurring. Therefore, this data proves that mechanisms 1 and 2 are not occurring.



If mechanism #3 is occurring, the quality of the water within the mine excavation should be similar to that in upgradient wells, such as the Cairns well, as shown on the map above. Although the complaints received by RMA do not allege any water quality impacts, specific water quality parameters can be used as "tracers" to identify

[3] It is also important to note that periods when the water level in MW-3 is lower than that in the Morton well occurred both during and after dewatering ceased in September 2013. Thus, these short-term events are not correlated to mining activities such as dewatering.

groundwater flow paths and, just as importantly, areas that are not connected on a common groundwater flow path. In that regard, there happen to be substantial water quality differences between the groundwater at the Stillwell Mine site and the groundwater at the neighboring well locations, especially with regard to nitrate. These differences are shown in the table below. Groundwater samples collected in 1999 from a well on the Stillwell property located to the south of the current mine excavation had an average of 8.6 milligrams per liter (mg/L)[4] of nitrate (EIR, Table 4.4-3, Page 4-53). Groundwater samples collected from the mining excavation in 2006 and 2014 did not contain detectable concentrations of nitrate. Thus, groundwater at and near the mine excavation contains little, if any, nitrate. In comparison, the Cairns well, located northeast of the mine excavation and upgradient of the Morton well, had nitrate concentrations in 2006 and 2014 of 82 mg/L and 84 mg/L[5], respectively. The Morton well had nitrate concentrations in 2006 and 2014 of 76 mg/L and 105 mg/L, respectively.

If dewatering of the Stillwell Mine excavation, or any other mining activity, was drawing water from the area of the private wells and into the mining excavation consistent with mechanism #3, the water quality within the mine excavation would be affected. However, after more than seven years of dewatering of the mine, and an additional year where the excavation was re-filling with groundwater after dewatering ceased in September 2013, nitrate is not present in the water within the excavation. Therefore, mechanism #3 is not occurring.

Location	Date	Nitrate (mg/L)
Stillwell Well T-3	1999 (average of 5 samples)	8.6
Stillwell Mine Pit	June 2006	<0.40
Stillwell Mine Pit	Sept 2014	<2.00
Cairns	June 2006	82
Cairns	Sept 2014	84
Morton	June 2006	76
Morton	Sept 2014	105

Under all three potential mechanisms described above, nitrate-impacted groundwater from the area of the private wells would be drawn into the mine excavation. The disparity in the nitrate levels in the water samples from the private wells and the mine excavation provides strong evidence that mining activities have not pulled water away from the area around or upgradient of the private wells. Consequently, the mining activities cannot be responsible for the changes in yield or water levels observed in the private wells.

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[4] Milligrams per liter in water is equivalent to parts per million (ppm).
[5] For comparison purposes, the state and federal drinking water maximum contaminant level for nitrate is 45 mg/L.

In summary, the available data demonstrate that the potential mechanisms by which mining activities at the Stillwell Mine could affect yields or water levels at the neighboring private wells have not occurred. Therefore, the only scientifically supportable conclusion is that mining activities have not affected the private wells.

Attachment 4

[October 30, 2014, EMKO Memorandum – Comparison of Groundwater Elevations and Dewatering Volumes – Stillwell Mine Project]

EMKO Environmental, Inc.
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MEMORANDUM

October 30, 2014

To: Gordon Brown
Ron Wilson
Pete LoCastro

CC: Pat Mitchell
Allison Reynolds

From: Andy Kopania

Subject: Comparison of Groundwater Elevations and Dewatering Volumes
Stillwell Mine Project

This Technical Memorandum presents a comparison of groundwater elevations in several wells near the Stillwell Mine with the volume of water pumped to the V-ditch as a result of dewatering of the mine excavation.

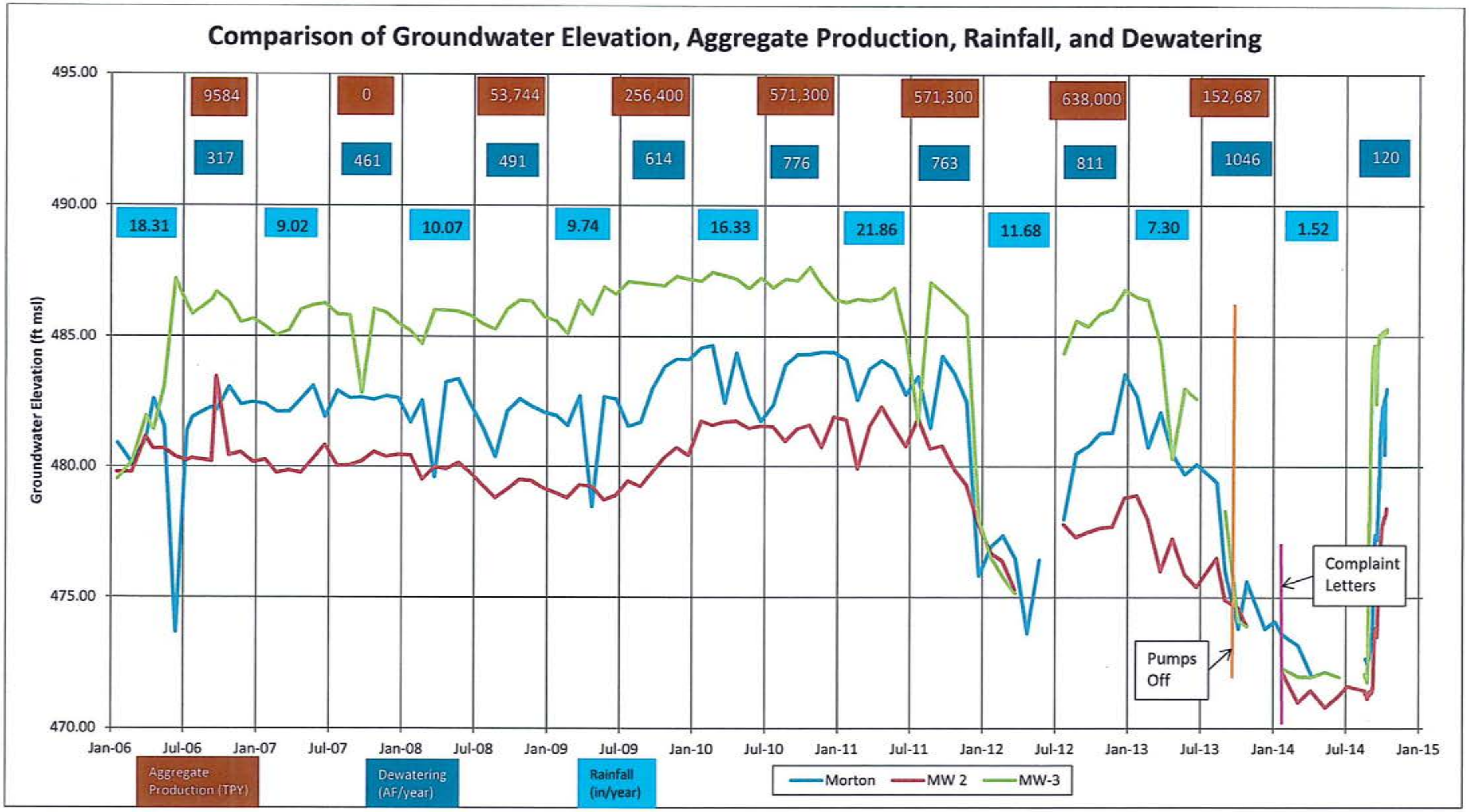
The figure below shows the groundwater elevations measured in CEMEX monitoring wells MW-2 and MW-3 and in the Morton well from 2006 to 2014. These three wells are located on the east side of the V-ditch. The Morton well is located approximately 1,000 feet south of the mine excavation. MW-3 is located approximately 350 feet north of the Morton well and MW-2 is located approximately 350 feet south of the Morton well. Please note that the annual volume of water pumped to the V-ditch as a result of dewatering of the Stillwell Mine is included at the top of this figure.

From 2006 through 2011, the volume of water pumped to the V-ditch increased from 317 acre-feet per year to 763 acre-feet per year. During this same period, the groundwater elevations in MW-2, MW-3, and the Morton well remained relatively constant, with only minor short-term fluctuations.

In 2012, the volume of water pumped to the V-ditch increased to 811 acre-feet per year. However, from January to February 2012, the water levels dropped seven to eight feet in MW-3 and the Morton well. The water level decline in these two wells continued through May 2012. In MW-2, a decline began in September 2011 and continued until after April 2012. Water levels recovered in all three wells during the second half of 2012.

From January 2013 to September 2013, 1,046 acre-feet of water was pumped to the V-ditch. In September 2013, the pumping ceased due to the second theft of the electrical wiring. In the less than nine months of 2013 during which pumping occurred, the total volume of water pumped to the V-ditch was almost 30 percent greater than the volume of water pumped to the V-ditch in twelve months in 2012, and was 35 percent to 230 percent greater than the volume of water pumped to the V-ditch in any year from 2006 to 2011. As shown on the figure below, despite the substantial increase in water volume being pumped to the V-ditch compared to prior years, the groundwater levels persistently declined from January 2013 through September 2013. The water level declines in MW-3, the Morton well, and MW-2 from January to September 2013 were approximately 12 feet, eight feet, and 3.5 feet, respectively. The decline in MW-2 was less than that in the other wells because MW-2 did not recover by the same magnitude as the other two wells at the end of 2012.

The data on the attached figure and the discussion above demonstrate that pumping to the V-ditch has not historically maintained the water levels in wells to the east of the V-ditch during multi-year periods of reduced rainfall.



Comparison of Groundwater Elevation, Aggregate Production, Rainfall, and Dewatering
Groundwater Elevation (ft msl)
495.00
490.00
485.00
480.00
475.00
470.00
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
9584
0
53,744
256,400
571,300
571,300
638,000
152,687
317
461
491
614
776
763
811
1046
120
18.31
9.02
10.07
9.74
16.33
21.86
11.68
7.30
1.52
Pumps Off
Complaint Letters
Aggregate Production (TPY)
Dewatering (AF/year)
Rainfall (in/year)
Morton
MW 2
MW-3

Attachment 5

[DellaValle Laboratory, Inc. – CEMEX Location Map #3 (MW1, MW2, MW3, MW4, Stillwell, Mills, Morton, Cairnes)]

DELLAVALLE
Laboratory, Inc.
Chemists and Consultants

Cemex
Well Location Map #1
(Hammond)

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Cemex
Well Location Map #2
(Wolford, Weller)

Cemex

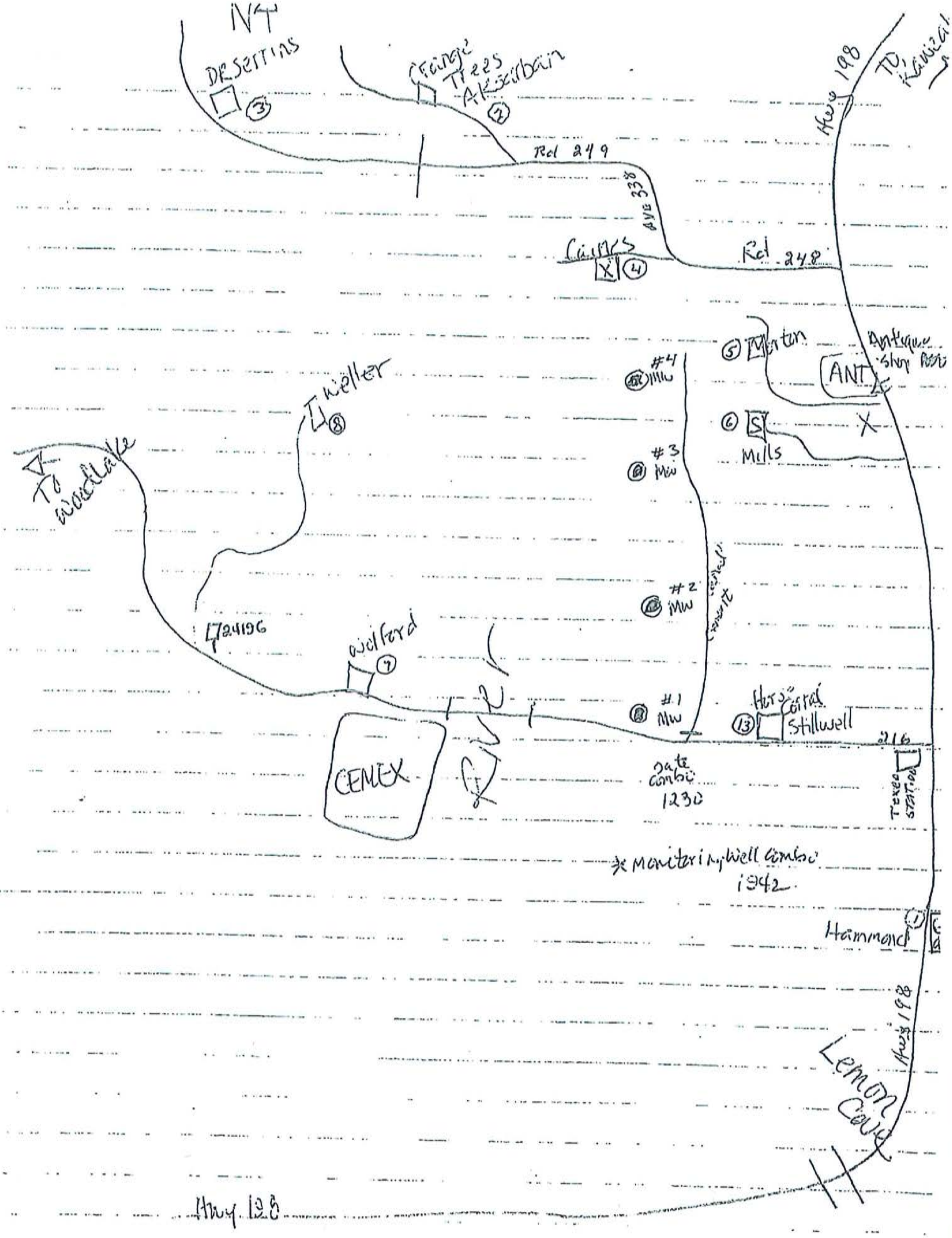
Location Map #3

(MW1, MW2, MW3, MW4, Stillwell, Mills, Morton, Carnes)

DELLAVALLE®
Laboratory, Inc.
Chemists and Consultants

Cemex

Location Map #4
(Aksarban, Serrins)


NT
DR Settins
3
Orange Trees Akizirban
2
Rd 249
Ave 338
Hwy 198
To Kaweah
Cairns
4
Rd 248
5
Merten
Antique Shop
ANT
#4 MW
Weller
8
6
S
Mills
#3 MW
To Woodlake
#2 MW
24196
Wolford
7
#1 MW
13
Hrs Corral Stillwell
216
Date combo 1230
CEMEX
River
Texaco Station
* Monitoring Well combo 1942
1
Hammond
Hwy 198
Lemon Cove
Hwy 198

Attachment 6

[August 25 ,2014, EMKO Memorandum – Water Quality Data – CEMEX Stillwell Mine]

EMKO Environmental, Inc.
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MEMORANDUM

August 25, 2014

To: Michael Spata, Tulare County RMA
Greg Young, Tully and Young

Cc: Aaron Bock, Tulare County RMA
Charles Przybylski, Tulare County RMA
Gordon Brown, CEMEX
Ronald Wilson, CEMEX
Pete LoCastro, CEMEX
Pat Mitchell, Mitchell Chadwick

From: Andy Kopania

Subject: Water Quality Data
CEMEX Stillwell Mine

This memorandum provides a brief discussion of water quality data obtained as part of monitoring conducted in relation to the CEMEX Stillwell Mine. Transmitted with this memorandum are the following:

- Excel Spreadsheet entitled "Water Quality Summary with Plots"; containing Table 1 showing the available water quality data and various water-quality analysis plots.
- Word file entitled "RMC – Water Sampling and Sounding Procedures", describing the methods used to obtain samples.
- PDF file entitled "Wellhead photos", showing the wellhead for each well sampled, except for Morton. The Morton well was not accessible on the date the photographs were taken due to a dog in the yard.
- Nine PDF files with titles beginning with "DELLAVALLE- -CEMEX QUARRY – <DATE>", providing the field records of well purging and sampling for the monitoring wells. The indicator <DATE> represents the date of the sampling event.
- Nine PDF files with titles "CEMEX 2005" through "CEMEX 2014" presenting the laboratory analytical reports summarized in the Excel Spreadsheet file referenced in the first bullet, above.

Of particular concern in the results are the nitrate levels in the Cairns, Morton, and Stillwell domestic wells. The nitrate levels routinely exceed the maximum contaminant level (MCL) for drinking water of 45 milligrams per liter (mg/L).

Due to an apparent miscommunication in the field, the mine pit (referred to as the "Pump Basin" on Table 1 and the lab sheets) and v-ditch were only sampled in 2006. Nitrate was not detected in the sample from the mine pit and was present at less than one-tenth of the MCL in the v-ditch sample. Comparison of the 2006 data from the v-ditch and the three domestic wells also indicates additional water quality differences, such as much higher total dissolved solids (TDS) in the domestic wells and differences in the proportion of various anions and cations (see Table 1 and the water quality plots in the Excel spreadsheet file).

Based on the groundwater flow direction (see August 22, 2014 memorandum *Groundwater Elevation Data, Hydrographs, and Contour Maps*), the elevated nitrate and TDS in the domestic wells is most likely a result of local septic systems clustered near the domestic wells and/or the orchards upgradient to the northeast of the domestic wells. The elevated nitrate and TDS are not sourced from the mine site or the v-ditch.

It is anticipated that all wells, the mine pit, and the v-ditch trench will be sampled shortly after pumping begins early next month to dewater the mine pit to prepare for the resumption of aggregate extraction.

1910 W. McKinley, Ste 110, Fresno, CA 93728, (559) 233-6129 FAX (559) 268-8174

3. METHODS

Monitoring Well Water Quality Sampling

A qualified subcontractor will be employed to sample the groundwater monitoring wells.

Before each sampling event, measurements of static water level will be taken from the north side of the top of each casing and recorded to the nearest 0.01 foot with respect to the established casing elevation. After collecting static water level measurements, the monitoring wells will be purged of at least three well volumes and sampled. During purging, temperature, pH, and specific conductance parameters of the return water will be periodically measured until the parameters stabilize.

Water samples will be collected from each well into laboratory prepared containers, sealed with tight fitting caps, labeled, and logged into a sample chain-of-custody. Samples will then be stored in a cool ice chest while awaiting delivery to Dellavalle Laboratory, Inc. Dellavalle Laboratory is a California Certified Environmental Laboratory Accreditation Program (ELAP) laboratory.

3.2 Domestic Well Water Quality Sampling

Domestic water samples will be collected from the tap hydraulically nearest each domestic well. The tap will be run for an amount of time sufficient to purge any water standing the pipes.

Water samples will be collected from each well into laboratory prepared containers, sealed with tight fitting caps, labeled, and logged into a sample chain-of-custody. Samples will then be stored in a cool ice chest while awaiting delivery to Dellavalle Laboratory, Inc. Dellavalle Laboratory is a California Certified Environmental Laboratory Accreditation Program (ELAP) laboratory.

3.3 Storage Basin Water Quality Sampling

Grab samples will be collected from four to six locations in each storage basin. The samples will be obtained from a depth of approximately one foot or greater from below the waters surface. These samples will be combined, thoroughly mixed, and the resulting sample will be placed in a laboratory prepared container, sealed, labeled, and stored in an ice chest while awaiting delivery to Dellavalle Laboratory. Dellavalle Laboratory, Inc is a California Certified ELAP laboratory and will perform sample analyses by appropriate analytical methods.

3.4 Groundwater Level Measurement

The groundwater monitoring well static water level measurements will be taken from the north side of the top of each casing and recorded to the nearest 0.01 foot with respect to the established casing elevation.

The domestic well static water level measurements will be taken from a hole at the top of each well casing, (provided that a sounding hole is present). A measurement reference point will be established and recorded for each well. Sounding equipment will be sanitized prior to being placed into the well. Water level measurements will be recorded to the nearest 0.01 foot with respect to the established reference point.

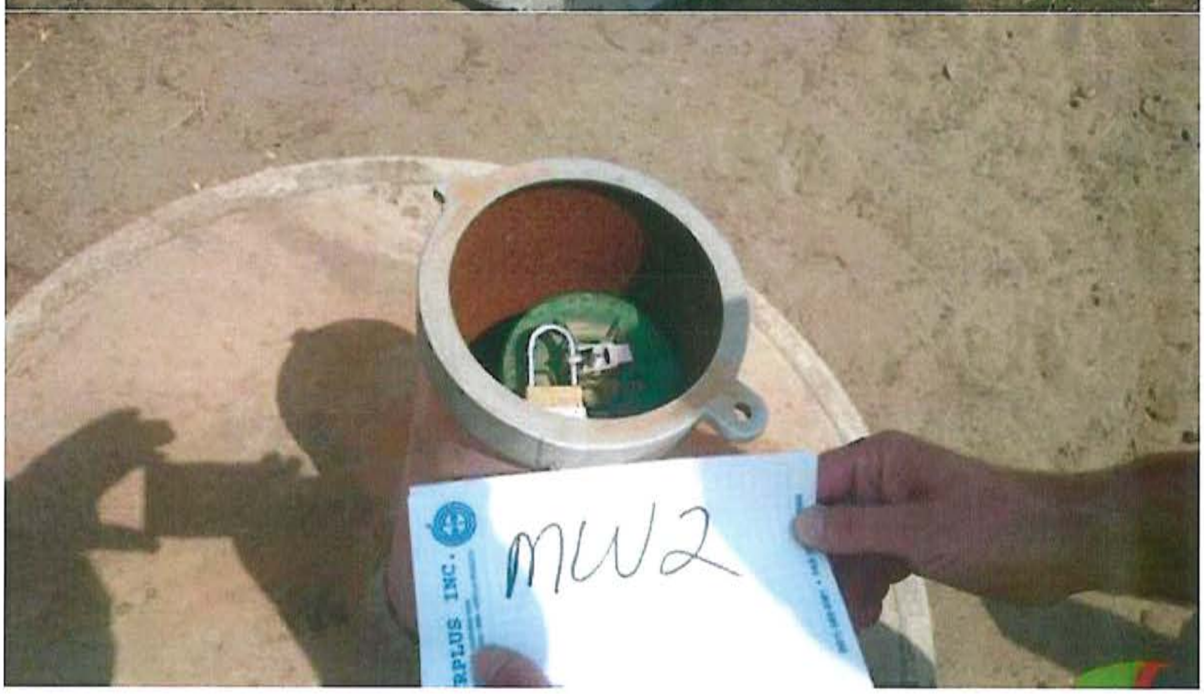

AKSARBAN


CARNES

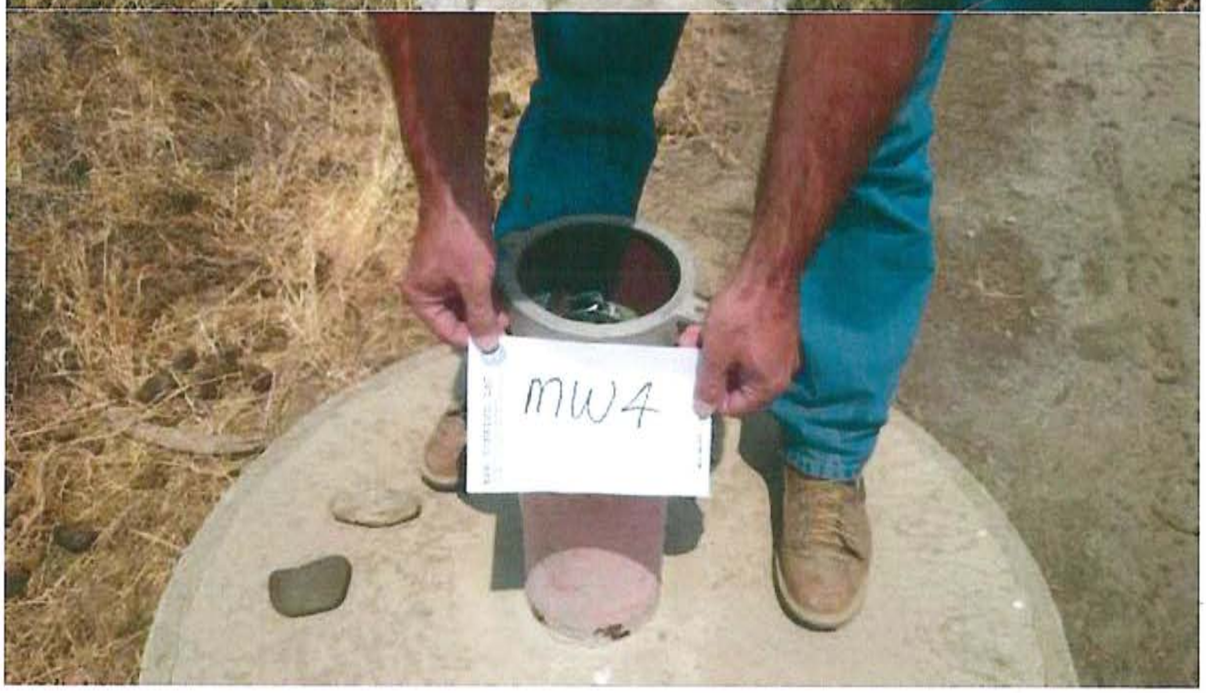

HAMMOND


Mills


MW1


MW2


MW3


MW4


SERPINS


Stillwell
#2


WOLFORD


WELLER

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2006 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
May 11, 2006

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2006

SAMPLE LOCATION / MW -	1	**DATE:**	5/11/2006

PROJECT NAME:	CEMEX		**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY	
ADDRESS:	24325 LOMITAS DR.		**SAMPLE TIME:**	17:00	
CITY, STATE:	LEMONCOVE, CA.		**SAMPLE CONTAINERS:**	2 - LITER PLASTICS	
SITE CONTACT:	GERALD COBURN		**PRESERVATIVES:**	NEAT / HNO3	
CONSULTANT:			**LAB. ANALYSIS BY:**	DELLAVALLE LABS.	
PROJECT MANAGER:	BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:	DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:	Don Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:	GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:		MSL	**COLOR:**	CLEAR	
DEPTH TO WATER: (feet.100th's)	6.15	FEET	**CALC. PURGE VOL.:**	4.85	GAL.
DEPTH OF WELL: (feet.100th's)	35.89	FEET	**TOTAL VOLUME PURGED:**	14.56	GAL.
STANDING WATER COLUMN:	29.74	FEET	**DEPTH OF PUMP:**	34	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.69	420	20.4	48	0.47	45
	4.85	"	"	7.11	387	18.6	55	0.40	16
	9.71	"	"	7.09	380	18.5	65	0.60	10
	14.56	"	"	7.11	375	18.3	68	0.69	9

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	6.68'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2006

SAMPLE LOCATION / MW -	2	**DATE:**	5/11/2006

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	16:24
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**		POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**		PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**		4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**		N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**		RUST TO LIGHT BROWN	
DEPTH TO WATER:	**(feet.100th's)**	9.21	FEET	**CALC. PURGE VOL.:**		25.60	GAL.
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED:**		76.79	GAL.
STANDING WATER COLUMN:		39.21	FEET	**DEPTH OF PUMP:**		47	FEET

FIELD PARAMETERS

TIME	**CUMULATIVE CASING VOLUME PER PURGE**	**DRAW DOWN (D.T.W.)**	**PUMPING RATE (GPM/LPM)**	**pH (units)**	**E. C. (UmMHOS)**	**TEMP. (Celsius)**	**O.R.P. (Mvolts)**	**DISSOLVED OXYGEN (PPM)**	**TURBIDITY COLOR (N.T.U.)**
	0	N/A	0.5 GPM	7.44	665	21.0	50.2	0.83	183
	25.60	"	"	7.63	692	21.6	49	1.2	112
	51.19	"	"	7.59	750	21.2	49	1.0	43
	76.79	"	"	7.53	759	21.1	42	1.1	27

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	18.90'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**LOCK IS MISSING.**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2006

SAMPLE LOCATION / MW -	3	**DATE:**	5/11/2006

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	15:00
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:	BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:	DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:	Don Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:	GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:		MSL	**COLOR:**	LIGHT BROWN TO CLEAR	
DEPTH TO WATER: (feet.100th's)	6.63	FEET	**CALC. PURGE VOL.:**	5.88	GAL.
DEPTH OF WELL: (feet.100th's)	42.65	FEET	**TOTAL VOLUME PURGED:**	17.64	GAL.
STANDING WATER COLUMN:	36.02	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.45	934	22.1	49.5	0.71	48
	5.88	"	"	7.34	906	21.5	49	0.36	36
	11.76	"	"	7.20	899	21.2	51	0.37	26
	17.64	"	"	7.11	894	21.0	51	0.34	20

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	6.68'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2006

SAMPLE LOCATION / MW -	4	**DATE:**	5/11/2006

PROJECT NAME:	CEMEX		**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY	
ADDRESS:	24325 LOMITAS DR.		**SAMPLE TIME:**	14:05	
CITY, STATE:	LEMONCOVE, CA.		**SAMPLE CONTAINERS:**	2 - LITER PLASTICS	
SITE CONTACT:	GERALD COBURN		**PRESERVATIVES:**	NEAT / HNO3	
CONSULTANT:			**LAB. ANALYSIS BY:**	DELLAVALLE LABS.	
PROJECT MANAGER:	BEN NYDAM		**MONUMENT:**	FLUSH	
SAMPLER:	DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:	Don Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:	GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:		MSL	**COLOR:**	RUST TO CLEAR	
DEPTH TO WATER: (feet.100th's)	8.51	FEET	**CALC. PURGE VOL.:**	13.13	GAL.
DEPTH OF WELL: (feet.100th's)	28.63	FEET	**TOTAL VOLUME PURGED:**	39.40	GAL.
STANDING WATER COLUMN:	20.12	FEET	**DEPTH OF PUMP:**	27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.73	600	22.5	49.8	1.7	147
	13.13	"	"	7.18	797	20.2	55.3	1.7	33
	26.27	"	"	7.17	793	19.8	55.4	1.06	17
	39.40	"	"	6.68	791	19.7	56	1.4	12

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	8.55'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**LOCK IS MISSING !!**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

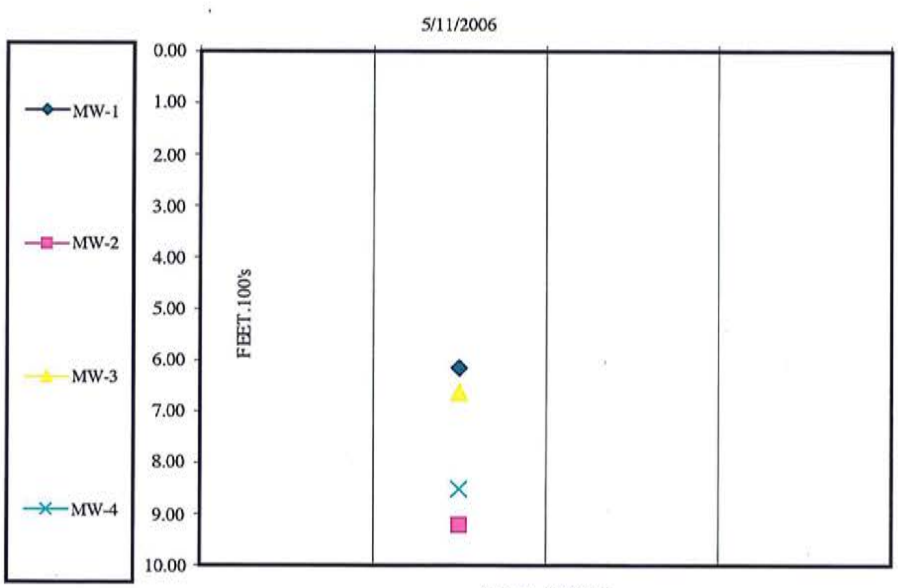
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2006
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE		5/11/06			DEPTH
LOCATION					
MW-1		6.15			35.89'
MW-2		9.21			48.42'
MW-3		6.63			42.65'
MW-4		8.51			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH

GEOTECHNICAL SUPPORT SERVICES

2007 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
June 14, 2007

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2007

SAMPLE LOCATION / MW -	1	**DATE:**	6/14/2007

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	14:10
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BROWN TO LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	7.13	FEET	**CALC. PURGE VOL.:**	4.69	GAL.
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	14.08	GAL.
STANDING WATER COLUMN:		28.76	FEET	**DEPTH OF PUMP:**	34	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	8.37	386	20.5	202	4.5	206
	4.69	"	"	7.88	292	18.0	214	4.0	123
	9.39	"	"	7.69	277	17.6	201	3.7	89
	14.08	"	"	7.45	266	16.5	178	3.3	77

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	7.17'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2007

SAMPLE LOCATION / MW -	2	**DATE:**	6/14/2007

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	13:43
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN	
DEPTH TO WATER:	(feet.100th's)	9.62	FEET	**CALC. PURGE VOL.:**	25.33	GAL.
DEPTH OF WELL:	(feet.100th's)	48.42	FEET	**TOTAL VOLUME PURGED:**	75.99	GAL.
STANDING WATER COLUMN:		38.80	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.64	444	20.8	50	3.7	238
	25.33	"	"	7.74	451	20.6	50	3.4	304
	50.66	"	"	7.76	451	20.6	51	3.4	351
	75.99	"	"	7.75	450	20.5	52	3.3	226

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	19.02'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**LOCK IS MISSING.**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2007

SAMPLE LOCATION / MW -	3	**DATE:**	6/14/2007

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	12:45
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	(feet.100th's)	3.41	FEET	**CALC. PURGE VOL.:**	6.40	GAL.
DEPTH OF WELL:	(feet.100th's)	42.65	FEET	**TOTAL VOLUME PURGED:**	19.21	GAL.
STANDING WATER COLUMN:		39.24	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.77	272	19.8	60	5.1	488
	6.40	"	"	7.71	222	18.1	64	5	81
	12.81	"	"	7.64	216	17.5	67	4.8	50
	19.21	"	"	7.56	222	17.6	69	4.7	27

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	3.44'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2007

SAMPLE LOCATION / MW - 4 **DATE:** 6/14/2007

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	12:20
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**		FLUSH	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**		PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**		4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**		N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BROWN TO LIGHT BROWN TO CLEAR		
DEPTH TO WATER:	(feet.100th's)	6.12	FEET	**CALC. PURGE VOL.:**		14.69	GAL.
DEPTH OF WELL:	(feet.100th's)	28.63	FEET	**TOTAL VOLUME PURGED:**		44.08	GAL.
STANDING WATER COLUMN:		22.51	FEET	**DEPTH OF PUMP:**		27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	8.45	590	21.0	72	11	1012
	14.69	"	"	8.10	498	20.1	84	9.4	149
	29.39	"	"	7.78	534	19.7	87	7.5	67
	44.08	"	"	7.66	561	19.7	84	6.6	44

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	6.15'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**LOCK IS MISSING !!**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

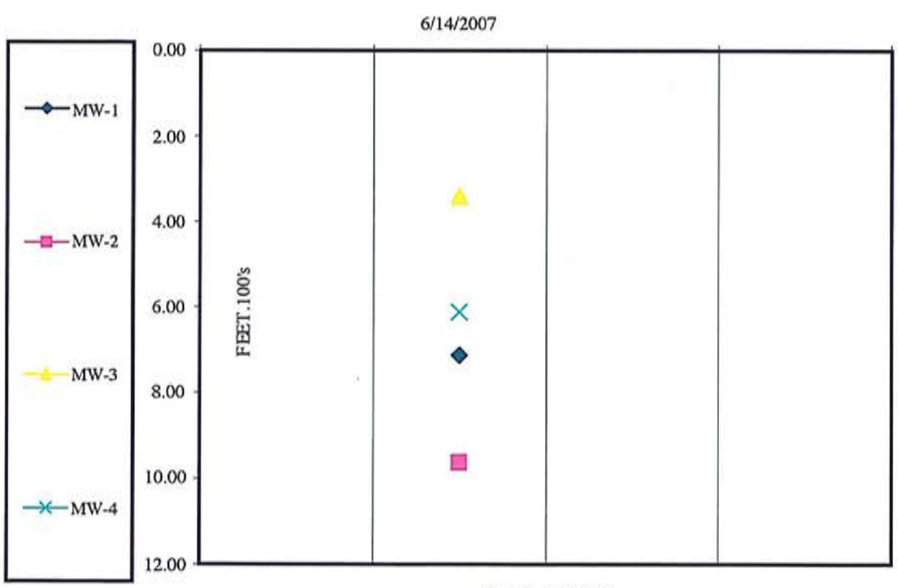
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2007
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE		6/14/07			DEPTH
LOCATION					
MW-1		7.13			35.89'
MW-2		9.62			48.42'
MW-3		3.41			42.65'
MW-4		6.12			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2008
GROUNDWATER
FIELD MONITORING
SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
August 28, 2008

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2008

SAMPLE LOCATION / MW -	1	**DATE:**	8/28/2008

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	14:47
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL :**	PVC		
SIGNED:				**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BROWN TO CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	7.90	FEET	**CALC. PURGE VOL.:**	4.57	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	13.5	GAL.	
STANDING WATER COLUMN:		27.99	FEET	**DEPTH OF PUMP:**	34	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	0.5 GPM	6.70	187	22.1	53	2.7	745
	4.57	4.5	"	"	6.14	172	23.8	61	2.2	193
	9.14	9	"	"	6.07	193	23.9	61	2.2	112
	13.70	13.5	"	"	6.02	208	24.1	59	2.2	73

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	8.00'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2008

SAMPLE LOCATION / MW -	2	**DATE:**	8/28/2008

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	14:21
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BROWN TO LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	(feet.100th's)	10.54	FEET	**CALC. PURGE VOL.:**	24.73	GAL.
DEPTH OF WELL:	(feet.100th's)	48.42	FEET	**TOTAL VOLUME PURGED:**	75	GAL.
STANDING WATER COLUMN:		37.88	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	0.5 GPM	6.57	591	21.4	58	3.2	165
	24.73	25	"	"	6.95	615	21.4	55	2.5	99
	49.46	50	"	"	6.94	644	21.4	55	2.5	72
	74.18	75	"	"	6.93	683	21.4	56	2.6	59

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	18.13'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2008

SAMPLE LOCATION / MW -	3	**DATE:**	8/28/2008

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	13:30
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	4.11	FEET	**CALC. PURGE VOL.:**	6.29	GAL.
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED:**	18	GAL.
STANDING WATER COLUMN:		38.54	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	0.5 GPM	6.55	316	20.9	58	3.3	25
	6.29	6	"	"	6.43	243	19.5	63	2.7	17
	12.58	12	"	"	6.38	240	19.5	64	2.4	11
	18.87	18	"	"	6.23	242	19.7	67	2.3	10

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	13.40'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2008

SAMPLE LOCATION / MW -	4	**DATE:**	8/28/2008

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	13:00
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BROWN TO LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	8.50	FEET	**CALC. PURGE VOL.:**	13.14	GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED:**	39	GAL.
STANDING WATER COLUMN:		20.13	FEET	**DEPTH OF PUMP:**	27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	0.5 GPM	7.00	887	23.1	54	5.2	1000
	13.14	13	"	"	6.75	913	21.2	59	3.9	128
	26.28	26	"	"	6.63	963	21.0	59	3.4	49
	39.42	39	"	"	6.55	976	20.7	60	3.4	30

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	19.17'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

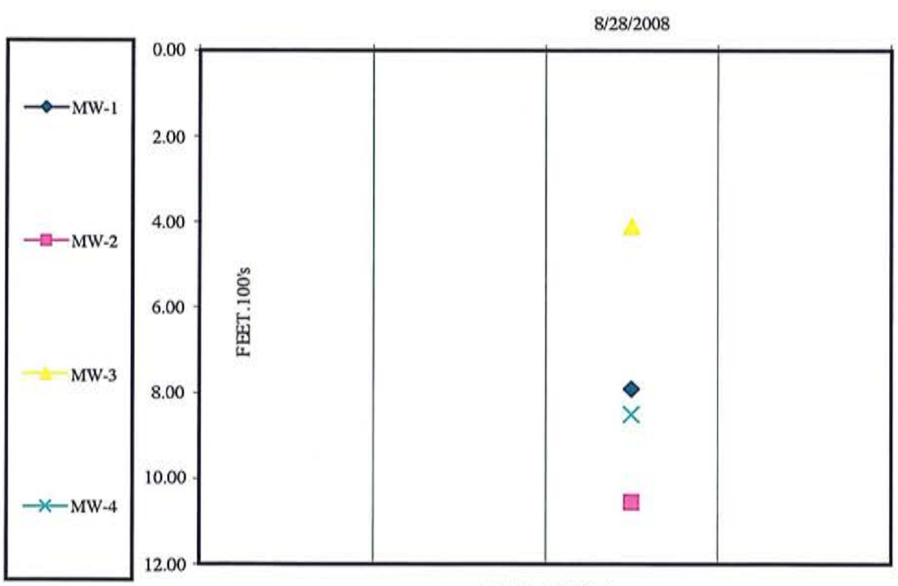
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2008
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE			8/28/08		DEPTH
LOCATION					
MW-1			7.90		35.89'
MW-2			10.54		48.42'
MW-3			4.11		42.65'
MW-4			8.50		28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH

GEOTECHNICAL SUPPORT SERVICES

2010 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
June 23, 2010

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2010

SAMPLE LOCATION / MW -	1	**DATE:**	6/23/2010

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	10:25
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA.:**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BLACK TO CLEAR	
DEPTH TO WATER:	(feet.100th's)	5.80	FEET	**CALC. PURGE VOL.:**	4.91	GAL.
DEPTH OF WELL:	(feet.100th's)	35.89	FEET	**TOTAL VOLUME PURGED**	15.0	GAL.
STANDING WATER COLUMN:		30.09	FEET	**DEPTH OF PUMP:**	34	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	7.11	407	23.9	155	N/A	1000+
	4.91	5	"	"	7.01	394	21.8	166	"	373
	9.82	10	"	"	6.99	392	20.7	164	"	111
	14.73	15	"	"	7.04	392	20.9	163	"	23

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	10.13'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**INSTALLED TUBING.**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2010

SAMPLE LOCATION / MW -	2	**DATE:**	6/23/2010

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	9:47
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	8.40	FEET	**CALC. PURGE VOL.:**	26.13	GAL.
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED**	78	GAL.
STANDING WATER COLUMN:		40.02	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	8.16	548	21.2	128	N/A	51
	26.13	26	"	"	8.26	553	21.9	122	"	38
	52.25	52	"	"	8.29	551	22.1	125	"	41
	78.38	78	"	"	8.20	553	22	125	"	30

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	15.45'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2010

SAMPLE LOCATION / MW -	3	**DATE:**	6/23/2010

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	9:03
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	2.52	FEET	**CALC. PURGE VOL.:**	6.55	GAL.
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED**	10	GAL.
STANDING WATER COLUMN:		40.13	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	7.16	369	21.5	99	N/A	9
	6.55	6.5	"	"	7.12	339	19.2	108	"	6
	13.10	13	"	"	7.06	341	18.5	112	"	4
	19.65	9.5	"	"	7.02	342	18.3	115	"	3

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	2.59'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2010

SAMPLE LOCATION / MW -	4	**DATE:**	6/23/2010

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	8:40
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	5.62	FEET	**CALC. PURGE VOL.:**	15.02	GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED**	45	GAL.
STANDING WATER COLUMN:		23.01	FEET	**DEPTH OF PUMP:**	27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	8.08	1108	22.9	39	N/A	171
	15.02	15	"	"	7.08	1476	21.7	43	"	30
	30.04	30	"	"	7.00	1557	21.1	45	"	19
	45.06	45	"	"	6.97	1552	23.0	49	"	15

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	5.70'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

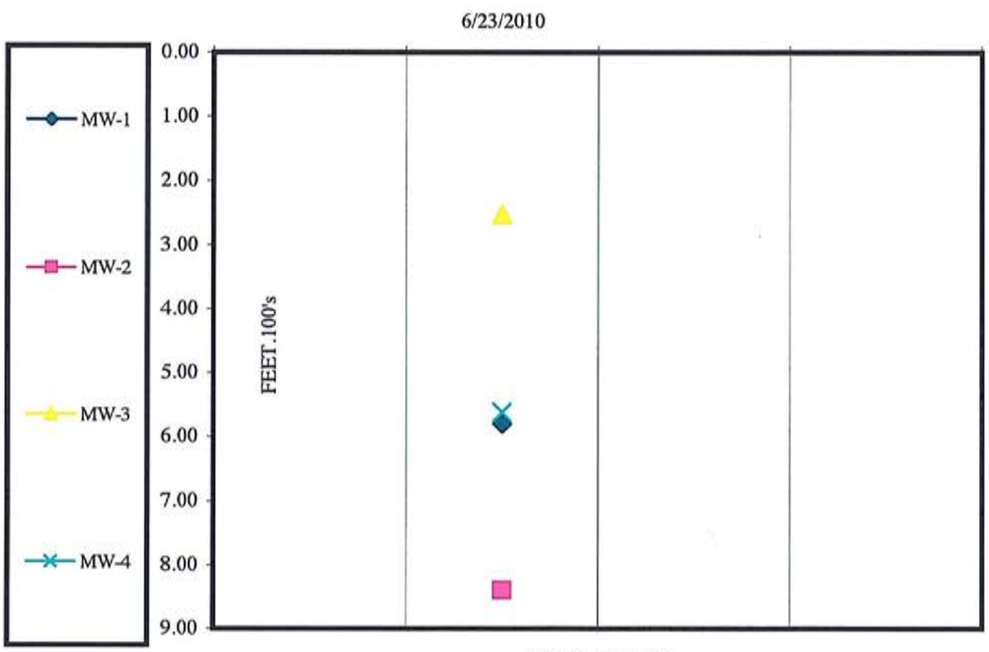
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2010
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3A	QTR. 3A	TOTAL
DATE		6/23/10			DEPTH
LOCATION					
MW-1		5.80			35.89'
MW-2		8.40			48.42'
MW-3		2.52			42.65'
MW-4		5.62			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH

GEOTECHNICAL SUPPORT SERVICES

2011 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
July 11, 2011

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2011

SAMPLE LOCATION / MW -	1	**DATE:**	7/11/2011

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	17:00
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC		
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BLACK TO CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	6.30	FEET	**CALC. PURGE VOL.:**	4.83	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	15.0	GAL.	
STANDING WATER COLUMN:		29.59	FEET	**DEPTH OF PUMP:**	34	FEET	

FIELD PARAMETERS

TIME	**CUMULATIVE CASING VOLUME PER PURGE**	**ACTUAL VOLUME PURGED**	**DRAW DOWN (D.T.W.)**	**PUMPING RATE (GPM/LPM)**	**pH (units)**	**E. C. (UmMHOS)**	**TEMP. (Celsius)**	**O.R.P. (Mvolts)**	**DISSOLVED OXYGEN (PPM)**	**TURBIDITY COLOR (N.T.U.)**
	0	0	N/A	3.0 GPM	7.18	469	19.6	96	N/A	7
	4.83	5	"	"	7.09	464	19.0	102	"	3
	9.66	10	"	"	7.05	465	19.2	107	"	2
	14.49	15	"	"	7.06	465	19.1	105	"	2

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	8.99'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2011

SAMPLE LOCATION / MW -	2	**DATE:**	7/11/2011

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	16:39
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA.:**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	9.00	FEET	**CALC. PURGE VOL.:**	25.73	GAL.
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED:**	78	GAL.
STANDING WATER COLUMN:		39.42	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	7.61	530	21.4	76	N/A	46
	25.73	26	"	"	7.94	538	21.2	70	"	46
	51.47	52	"	"	7.92	556	21.1	84	"	38
	77.20	78	"	"	7.93	561	21.1	92	"	36

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	9.16'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2011

SAMPLE LOCATION / MW -	3	**DATE:**	7/11/2011

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	16:14
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:	BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:	DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:	Ashley Avilla		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:	GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:		MSL	**COLOR:**	CLEAR	
DEPTH TO WATER: (feet.100th's)	2.53	FEET	**CALC. PURGE VOL.:**	6.55	GAL.
DEPTH OF WELL: (feet.100th's)	42.65	FEET	**TOTAL VOLUME PURGED:**	10	GAL.
STANDING WATER COLUMN:	40.12	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	7.06	485	21.1	30	N/A	14
	6.55	6.5	"	"	6.93	428	18.8	55	"	5
	13.10	13	"	"	6.91	424	19.3	63	"	3
	19.64	9.5	"	"	6.89	423	19.7	72	"	3

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	2.55'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2011

SAMPLE LOCATION / MW -	4	**DATE:**	7/11/2011

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	15:55
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	5.69	FEET	**CALC. PURGE VOL.:**	14.98	GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED:**	45	GAL.
STANDING WATER COLUMN:		22.94	FEET	**DEPTH OF PUMP:**	27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	7.97	937	23.9	177	N/A	1000+
	14.98	15	"	"	7.41	998	20.9	-9	"	144
	29.95	30	"	"	7.27	1013	20.9	-33	"	60
	44.93	45	"	"	7.20	1024	20.7	-41	"	33

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	6.09'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

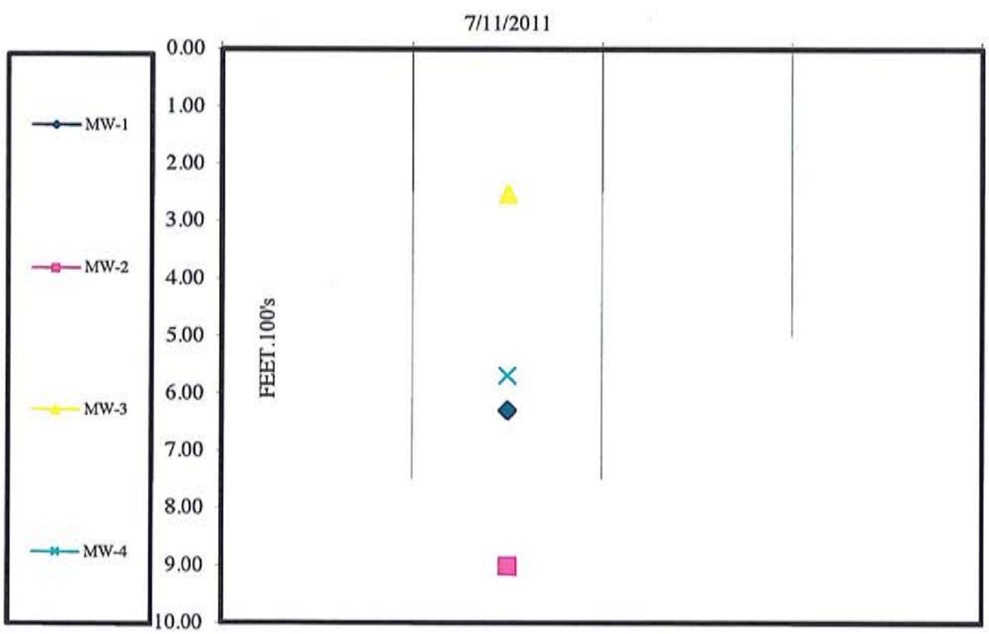
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2011
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE		7/11/11			DEPTH
LOCATION					
MW-1		6.30			35.89'
MW-2		9.00			48.42'
MW-3		2.53			42.65'
MW-4		5.69			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

2012
GROUNDWATER
FIELD MONITORING
SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
April 18, 2012

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2012

SAMPLE LOCATION / MW -	1	**DATE:**	4/18/2012

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	18:25
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA.:**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	9.73	FEET	**CALC. PURGE VOL.:**	4.27	GAL.
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	12.0	GAL.
STANDING WATER COLUMN:		26.16	FEET	**DEPTH OF PUMP:**	34	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	2.0 GPM	7.25	562	19.1	154	N/A	19
	4.27	4	"	"	7.03	565	18.1	117	"	6.5
	8.54	8	"	"	7.05	567	18.1	138	"	6
	12.81	12	"	"	7.02	569	18.2	166	"	0.99

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	9.75'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**REPLACED LOCK**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2012

SAMPLE LOCATION / MW -	2	**DATE:**	4/18/2012

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	18:05
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	(feet.100th's)	11.04	FEET	**CALC. PURGE VOL.:**	24.40	GAL.
DEPTH OF WELL:	(feet.100th's)	48.42	FEET	**TOTAL VOLUME PURGED:**	74	GAL.
STANDING WATER COLUMN:		37.38	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	4.0 GPM	7.47	621	20.6	187	N/A	50.5
	24.40	24.5	"	"	7.82	591	20.7	184	"	28
	48.80	49	"	"	7.72	617	20.7	175	"	24
	73.20	73.5	"	"	7.66	639	20.8	169	"	18

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	21.65'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2012

SAMPLE LOCATION / MW -	3	**DATE:**	4/18/2012

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	17:39
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	14.52	FEET	**CALC. PURGE VOL.:**	4.59	GAL.
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED:**	14	GAL.
STANDING WATER COLUMN:		28.13	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	1.0 GPM	7.12	465	20.4	164	N/A	13
	4.59	4.6	"	"	7.04	515	19.3	163	"	6
	9.18	9	"	"	7.03	526	19.2	169	"	2
	13.77	13.8	"	"	7.04	562	19.1	183	"	1

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	14.70'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2012

SAMPLE LOCATION / MW -	4	**DATE:**	4/18/2012

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	17:17
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH		
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL**	PVC		
SIGNED:		Ashley Light		**WELL CASING DIA. :**	4" /		0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A		NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN TO CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	17.28	FEET	**CALC. PURGE VOL.:**	7.41		GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED:**	22		GAL.
STANDING WATER COLUMN:		11.35	FEET	**DEPTH OF PUMP:**	27		FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	1.0 GPM	7.91	1188	21.8	202	N/A	629
	7.41	7.4	"	"	7.41	967	20.9	187	"	52
	14.82	15	"	"	7.13	1001	20.8	173	"	16
	22.23	22.2	"	"	7.05	1001	20.5	166	"	9

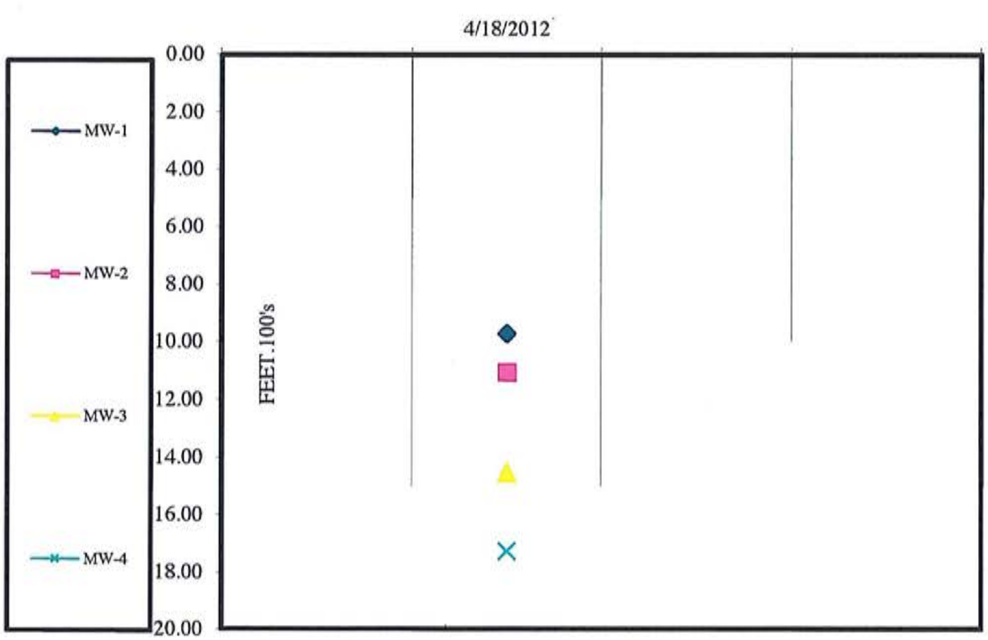
PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	17.39'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT
(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2012
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE		4/18/12			DEPTH
LOCATION					
MW-1		9.73			35.89'
MW-2		11.04			48.42'
MW-3		14.52			42.65'
MW-4		17.28			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2013 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
June 12, 2013

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2013

SAMPLE LOCATION / MW -	1	**DATE:**	6/12/2013

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	10:50
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	10.86	FEET	**CALC. PURGE VOL.:**	4.08	GAL.
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	12.0	GAL.
STANDING WATER COLUMN:		25.03	FEET	**DEPTH OF PUMP:**	~ 34	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
10:18	0	0	N/A	0.5 GPM	7.87	579	21.0	214	N/A	16
10:26	4.08	4	"	"	7.50	505	17.6	200	"	13
10:34	8.17	8	"	"	7.26	504	17.1	197	"	9
10:42	12.25	12	"	"	7.01	501	17.2	199	"	5
10:50	16.34	16	"	"	7.00	500	17.1	199		5

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	10.89'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2013

SAMPLE LOCATION / MW -	2	**DATE:**	6/12/2013

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	11:27
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	4" /	0.6528	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLOUDY RUST TO CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	12.83	FEET	**CALC. PURGE VOL.:**	23.23	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED:**	69	GAL.	
STANDING WATER COLUMN:		35.59	FEET	**DEPTH OF PUMP:**	~ 47	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
10:55	0	0	N/A	2.5 GPM	7.40	676	22.4	166	N/A	43
11:05	23.23	23	"	"	7.98	458	21.8	152	"	28
11:15	46.47	46	"	"	7.88	552	22.1	165	"	11
11:25	69.70	69	"	"	7.80	644	22.4	156	"	8

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	18.72'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2013

SAMPLE LOCATION / MW -	3	**DATE:**	6/12/2013

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	11:50
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	4.72	FEET	**CALC. PURGE VOL.:**	6.19	GAL.
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED:**	18	GAL.
STANDING WATER COLUMN:		37.93	FEET	**DEPTH OF PUMP:**	~ 41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
11:30	0	0	N/A	1.0 GPM	7.96	418	18.5	152	N/A	9
11:36	6.19	6	"	"	7.20	419	18.3	167	"	7
11:42	12.38	12	"	"	6.98	419	18.2	171	"	7
11:48	18.57	18	"	"	6.86	419	18.3	175	"	4

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	5.18'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2013

SAMPLE LOCATION / MW -	4	**DATE:**	6/12/2013

PROJECT NAME:		CEMEX		**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY	
ADDRESS:		24325 LOMITAS DR.		**SAMPLE TIME:**	12:20	
CITY, STATE:		LEMONCOVE, CA.		**SAMPLE CONTAINERS:**	3 - PLASTICS	
SITE CONTACT:		GERALD COBURN		**PRESERVATIVES:**	NEAT / HNO3 / HCL	
CONSULTANT:				**LAB. ANALYSIS BY:**	DELLAVALLE LABS.	
PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT RUST TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	6.92	FEET	**CALC. PURGE VOL.:**	14.17	GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED:**	42	GAL.
STANDING WATER COLUMN:		21.71	FEET	**DEPTH OF PUMP:**	~ 27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
11:59	0	0	N/A	2 GPM	6.99	682	21.6	170	N/A	358
12:06	14.17	14	"	"	7.30	887	21.3	163	"	103
12:13	28.34	28	"	"	7.27	900	21.2	158	"	40
12:20	42.52	42	"	"	7.26	900	21.2	151	"	15

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	7.17'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

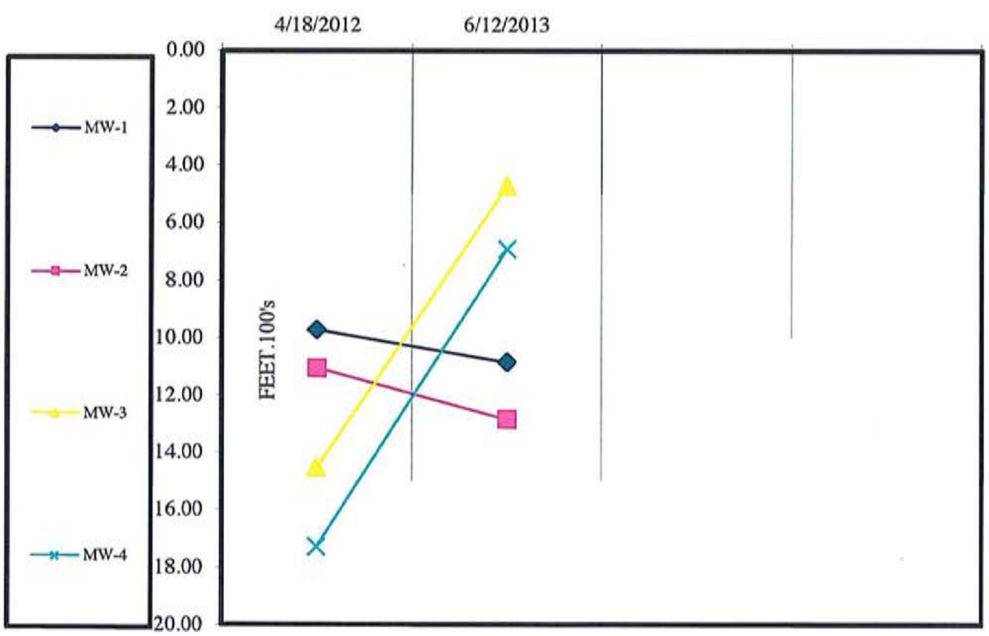
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2013
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE	4/18/12	6/12/13			DEPTH
LOCATION					
MW-1	9.73	10.86			35.89'
MW-2	11.04	12.83			48.42'
MW-3	14.52	4.72			42.65'
MW-4	17.28	6.92			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2014
GROUNDWATER
FIELD MONITORING
SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
July 30, 2014

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2014

SAMPLE LOCATION / MW -	1	**DATE:**	7/30/2014

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	20:22
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLOUDY LT. RUSTY TO CLEAR		
DEPTH TO WATER:	(feet.100th's)	14.91	FEET	**CALC. PURGE VOL.:**	3.42	GAL.	
DEPTH OF WELL:	(feet.100th's)	35.89	FEET	**TOTAL VOLUME PURGED**	12	GAL.	
STANDING WATER COLUMN:		20.98	FEET	**DEPTH OF PUMP:**	~ 34	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
20:09	0	0		1.0 GPM	6.93	732	22.4	4		
20:13	3.42	4		"	6.70	709	22.2	5		
20:17	6.85	8		"	6.61	706	22.2	42		
20:21	10.27	12		"	6.58	709	22.4	60		4
20:22	SAMPLED									

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	15.00'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	PARTLY CLOUDY / HOT	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2014

SAMPLE LOCATION / MW -	2	**DATE:**	7/30/2014

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	20:00
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Don Light		**WELL CASING DIA.:**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	RUSTY	
DEPTH TO WATER:	(feet.100th's)	18.61	FEET	**CALC. PURGE VOL.:**	19.46	GAL.
DEPTH OF WELL:	(feet.100th's)	48.42	FEET	**TOTAL VOLUME PURGED**	100	GAL.
STANDING WATER COLUMN:		29.81	FEET	**DEPTH OF PUMP:**	~ 47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
19:49	0	0		10 GPM	6.78	680	23.8	50		
19:51	19.46	20		"	7.80	555	23.3	36		
19:53	38.92	40		"	7.91	527	21.8	23		
19:55	58.38	60		"	7.82	518	21.6	16		
19:59	77.84	100		"	7.07	795	21.9	26		1250
20:00	SAMPLED									

PURGE METHOD:	3" GRUNDFOS SUBMERSIBLE PUMP		
SAMPLE METHOD:	3" GRUNDFOS SUBMERSIBLE PUMP		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	42.10'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**WELL TURNED VERY TURBID, DARK RUSTY DISCHARGE WATER.**		
	RAN ADDITIONAL PURGE TO SEE IF IMPROVED. WORSENED.		
WEATHER:	PARTLY CLOUDY / HOT	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2014

SAMPLE LOCATION / MW -	3	**DATE:**	7/30/2014

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	19:41
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HN03 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC		
SIGNED:		Don Light		**WELL CASING DIA.:**	2" /		0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A		NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLOUDY LT. BROWN TO CLEAR		
DEPTH TO WATER:	(feet.100th's)	17.80	FEET	**CALC. PURGE VOL.:**	4.06		GAL.
DEPTH OF WELL:	(feet.100th's)	42.65	FEET	**TOTAL VOLUME PURGED**	12		GAL.
STANDING WATER COLUMN:		24.85	FEET	**DEPTH OF PUMP:**	~ 41		FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
19:28	0	0		1.0 GPM	7.04	796	25.3	6		
19:32	4.06	4		"	6.92	725	24.5	-41		
19:36	8.11	8		"	6.85	702	22.7	15		
19:40	12.17	12		"	6.78	688	22.3	35		3
19:41	SAMPLED									

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	18.16'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	PARTLY CLOUDY / HOT	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2014

SAMPLE LOCATION / MW -	4	**DATE:**	7/30/2014

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	19:19
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC		
SIGNED:		Don Light		**WELL CASING DIA.:**	4" /		0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A		NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	RUSTY TO LIGHT TAN		
DEPTH TO WATER:	**(feet.100th's)**	20.00	FEET	**CALC. PURGE VOL.:**	5.63		GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED**	18		GAL.
STANDING WATER COLUMN:		8.63	FEET	**DEPTH OF PUMP:**	~ 27		FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
19:00	0	0		1.0 GPM	8.08	912	25.9	79		
19:06	5.63	6		"	7.52	858	24.1	91		
19:12	11.27	12		"	7.07	873	23.9	83		
19:18	16.90	18		"	6.98	859	23.8	71		8
19:19	SAMPLED									

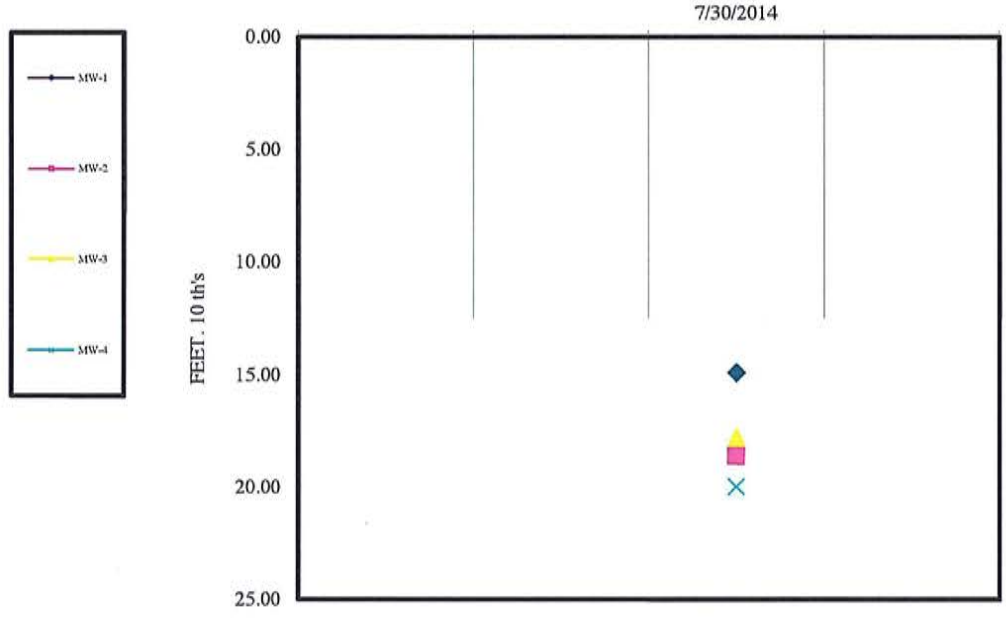
PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	20.16'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	PARTLY CLOUDY / HOT	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT, INC.
(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX QUARRY
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2014
DEPTH TO WATER MEASUREMENTS

		QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE	MONUMENT			7/30/14		DEPTH
LOCATION						
MW-1	POST			14.91		35.89'
MW-2	POST			18.61		48.42'
MW-3	POST			17.80		42.65'
MW-4	POST			20.00		28.63'



D.T.W. CHART

NOTE:
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

Dellavalle Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
58

Material Submitted: Water

Lab No. 93772
Sample Date 5/11/2006
Sample Time
Submitted Date 5/12/2006
Submitted by Gerald Coburn - Plnt Mgr
Reported Date 5/19/2006
Location/Project Stillwell -Grndwtr Monitoring
Copy To
Fax
e-mail

No.	Description	pH (unit)	NO_3 (mg/L)	SO_4	TDS	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	Ca	Mg	Na	K	Fe
	MDL--->		0.04	0.03	10		0.9	3	0.03	0.1	0.1	0.2	0.3	0.004
	RL--->	1.0 ± 14.0	0.45	0.2	10	10	1	5	0.1	0.1	0.1	1.0	0.5	0.1
	SM--->	4500H-B	4500NO3E		2540C	2320B	2320B	2320B	4500Cl C	3120B	3120B	3120B	3120B	3120B
	EPA--->		300.0	300.0					300.0	200.7	200.7	200.7	200.7	
1	MW1 17:00	7.2	22.6	<0.2	263	126	<1	126	15.8	45.0	8.5	26.4	3.2	0.2
2	MW2 16:24	7.8	52.5	<0.2	613	259	<1	259	20.5	61.8	30.2	48.8	6.3	3.1
3	MW3 15:00	7.3	59.8	<0.2	660	285	<1	285	33.5	89.7	25.2	76.7	6.3	0.3
4	MW4 14:05	7.5	79.1	<0.2	605	286	<1	286	32.8	78.2	21.7	65.9	4.6	1.6

*See external laboratory documentation

NOTE: ***For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO_3, to pH <2***

ND = None Detected

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Records retained for 5 yrs.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

RMC Pacific Materials
24325 Lomitas Dr. Plant 133
Lemon Cove CA 93244
13588
08

Material Submitted

Lab No. 85263
Sample Date 5/19/2005
Sample Time
Submitted Date 5/20/2005
Submitted by Gerald Coburn
Reported Date 6/1/2005
Location/Project Stillwell Project - Groundwater Monitoring
Copy To
FAX
E-Mail

No.	Description	Unit pH	mg/L TDS	Na	K	Ca	Mg	Cl	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Total Alkalinity as $CaCO_3$	SO_4	NO_3	Fe
	MDL--->		10	1.5	0.3	0.1	0.1	0.03	0.9	3		0.03	0.04	0.004
	RL--->	1.0 ± 14.0	10	1.0	0.5	0.1	0.1	0.1	1	5.0	10.0	0.2	0.45	0.1
	SM--->	4500H-B	2540C	3120B	3120B	3120B	3120B	4500Cl C	2320B	2320B	2320B	4500SO4 E	4500NO3E	3120B
	EPA--->							300.0				300.0	300.0	
1	Monitoring Well MW1 11:08am	7.0	206	29.1	2.5	33.3	6.4	17.6	<1	101	101	43.5	17.1	0.9
2	MW2 12:24pm	7.9	489	60.6	6.1	55.3	30.2	24.8	<1	179	179	127	67.7	4.3
3	MW3 12:48pm	7.5	652	90.2	5.0	92.3	25.4	46.1	<1	293	293	143	44.3	0.5
4	MW4 13:20pm	7.6	559	74.0	3.5	81.2	21.5	34.9	<1	233	233	108	83.5	2.4

***NOTE:** For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO_3 to pH <2*

MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
EPA = Environmental Protection Agency methods used unless otherwise indicated.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120659
Sample Date 9/9/2008
Sample Time
Submitted Date 9/9/2008
Submitted by Gerald Coburn-Plant Manager
Reported Date 9/23/2008
Location/Project Stillwell Project - Domestic Well Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Total Ca	Total Mg	Total Na
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL—>						250	250	10	45	500			
MDL—>			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	1.5
RL—>	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1
SM—>	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B
EPA—>						300	300	300	300				
Analysis Date:	9/9/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/9/2008	9/11/2008	9/11/2008	9/11/2008
001 Weller - Domestic Well 08:25	7.5	80	<1	<1	80	7.9	23.0	2.8	12.3	148	23.8	4.1	11
002 Stillwell - Domestic Well 08:10	7.2	180	<1	<1	180	18.8	49.7	17.8	78.8	432	65.6	23.0	32
003 Morton - Domestic Well 07:55	7.4	253	<1	<1	253	39.2	95.4	16.9	74.7	592	73.4	20.9	51
004 Caines - Domestic Well 07:45	6.9	222	<1	<1	222	23.8	74.9	26.5	118	548	78.3	21.6	47

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120659
Sample Date 9/9/2008
Sample Time
Submitted Date 9/9/2008
Submitted by Gerald Coburn-Plant Manager
Reported Date 9/23/2008
Location/Project Stillwell Project - Domestic Well Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	Total Fe	Total K	Dissolved *Fe
	mg/L	mg/L	
MCL-->	0.30		
MDL-->	0.004	0.3	
RL-->	0.01	0.5	
SM-->	3120 B	3120 B	
EPA-->			
Analysis Date:	9/11/2008	9/11/2008	Send Out
001 Weller - Domestic Well 08:25	1.33	1.9	*
002 Stillwell - Domestic Well 08:10	2.96	3.4	*
003 Morton - Domestic Well 07:55	0.22	3.8	*
004 Caines - Domestic Well 07:45	0.15	2.8	*

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

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FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120142
Sample Date 8/28/2008
Sample Time
Submitted Date 8/28/2008
Submitted by Gerald Coburn-Plant Mgr
Reported Date 9/16/2008
Location/Project Stillwell Proj-GW Monitoring
Copy To
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e-mail geraldw.coburn@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL—>						250	250	10	45	500					0.30
MDL—>			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.004
RL—>	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.01
SM—>	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA—>						300	300	300	300						
Analysis Date:	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	9/4/2008	9/4/2008	9/4/2008	9/4/2008	9/4/2008
001 MW-1 14:47	6.8	89	<1	<1	89	3.1	7.1	0.5	2.03	596	25.4	4.3	10	2.2	2.42
002 MW-2 14:21	7.9	192	<1	<1	192	20.6	99.6	5.5	24.3	375	37.2	29.8	52	8.1	2.91
003 MW-3 13:30	7.2	111	<1	<1	111	0.8	1.6	<0.1	<0.45	132	23.3	6.4	12	2.0	0.42
004 MW-4 13:00	7.5	222	<1	<1	222	355	501	68.7	304	580	85.0	24.2	78	4.2	2.04

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________________

ELAP Certification #1595

DELLAVALLE
Laboratory, Inc.
Chemists and Consultants

July 31, 2006

Gerald Coburn
CEMEX #13588
13475 N. Friant Road
Friant, Ca 93626

Re: Lab No. 95594, 95595

Dear Gerald,

Enclosed are the results of analysis for the domestic well water and pond water samples recently collected to meet Tulare Counties annual sampling requirements.

If you have any questions, please call me.

Respectfully,
Ben Nydam

Ben Nydam
Certified Crop Advisor # 22552

BN/sd

Enclosures

1910 W. McKinley, Suite 110 • Fresno, CA 93728-1298 • (559) 233-6129
www.dellavallelab.com

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 95594
Sample Date 6/26/2006
Sample Time
Submitted Date 6/26/2006
Submitted by Gerald Coburn-P M
Reported Date 7/7/2006
Location/Project Stillwell D.Well Monitoring
Copy To
Fax
e-mail

No.	Description	pH (unit)	NO_3	SO_4	TDS	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	Ca	Mg	Na	Fe	K
			mg/L											
	MDL--->		0.04	0.03	10		0.9	3	0.03	0.1	0.1	1.5	0.004	0.3
	RL--->	1.0 ± 14.0	0.45	0.2	10	10	1	5	0.1	0.1	0.1	1	0.1	0.5
	SM--->	4500H-B	4500NO3E		2540C	2320B	2320B	2320B	4500Cl C	3120B	3120B	3120B	3120B	3120B
	EPA--->		300.0	300.0					300.0					
1	Stillwell - domestic well 07:35	7.5	53.36	48.0	398	167	<1	167	13.1	57.7	20.3	27	0.2	2.5
2	Morton - domestic well 07:20	7.8	75.75	84.1	565	220	<1	220	26.0	78.5	23.1	58	<0.1	4.0
3	Calmes - domestic well 07:00	7.5	81.52	56.4	515	217	<1	217	20.0	72.2	20.9	43	<0.1	2.7

*See external laboratory documentation for Ferrous Iron from Basic Laboratory

NOTE: ***For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO_3 to pH <2***

ND = None Detected

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Records retained for 5 yrs.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 95595
Sample Date
Sample Time
Submitted Date 6/26/2006
Submitted by Gerald Coburn-Plant Manager
Reported Date 7/7/2006
Location/Project Stillwell Project - Ponds
Copy To
Fax
e-mail

No.	Description	unit pH	mg/L NO$_3$	SO$_4$	TDS	Total Alkalinity as CaCO$_3$	CO$_3$ as CaCO$_3$	HCO$_3$ as CaCO$_3$	Cl	Ca	Mg	Na	Fe	K
	MDL--->		0.04	0.03	10		0.9	3	0.03	0.1	0.1	1.5	0.004	0.3
	RL--->	1.0 ± 14.0	0.45	0.2	10	10	1	5	0.1	0.1	0.1	1	0.1	0.5
	SM--->	4500H-B	4500NO3E		2540C	2320B	2320B	2320B	4500Cl C	3120B	3120B	3120B	3120B	3120B
	EPA--->		300.0	300.0					300.0					
1	Pump Basin 08:30	7.7	<0.40	19.6	200	141	<1	141	11.7	41.1	7.8	13	0.6	4.0
2	Recharge Basin 08:40	7.8	3.18	15.5	113	69	<1	69	7.3	21.6	4.0	11	0.1	1.7

*See external laboratory documentation for Ferrous Iron from Basic Laboratory

NOTE: ***For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO $_3$ to pH <2***

ND = None Detected

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Records retained for 5 yrs.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE
Laboratory, Inc.
Chemists and Consultants

June 19, 2006

Gerald Coburn
Cemex #13588
13475 N. Friant Road
Friant, CA 93626

Lab No.: 93772 & 94297

Dear Gerald,

Enclosed are the results for the annual monitoring well water samples recently collected on May 11, 2006.

If you have any questions, please call me.

Respectfully,

Ben Nydam

Ben Nydam
Certified Crop Advisor # 22552
Dellavalle Laboratory, Inc.

BN:pjm
Enclosures

F:\2005-2006\2005-2006 Jun\BN\Cemex93772,94297.doc

1910 W. McKinley, Suite 110 • Fresno, CA 93728-1298 • (559) 233-6129
www.dellavallelab.com

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
58

Material Submitted: Water

Lab No. 93772
Sample Date 5/11/2006
Sample Time
Submitted Date 5/12/2006
Submitted by Gerald Coburn - Plnt Mgr
Reported Date 5/19/2006
Location/Project Stillwell -Grndwtr Monitoring
Copy To
Fax
e-mail

No.	Description	pH (unit)	NO_3 (mg/L)	SO_4	TDS	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	Ca	Mg	Na	K	Fe
	MDL--->		0.04	0.03	10		0.9	3	0.03	0.1	0.1	0.2	0.3	0.004
	RL--->	1.0 ± 14.0	0.45	0.2	10	10	1	5	0.1	0.1	0.1	1.0	0.5	0.1
	SM--->	4500H-B	4500NO3E		2540C	2320B	2320B	2320B	4500Cl C	3120B	3120B	3120B	3120B	3120B
	EPA--->		300.0	300.0					300.0	200.7	200.7	200.7	200.7	
1	MW1 17:00	7.2	22.6	<0.2	263	126	<1	126	15.8	45.0	8.5	26.4	3.2	0.2
2	MW2 16:24	7.8	52.5	<0.2	613	259	<1	259	20.5	61.8	30.2	48.8	6.3	3.1
3	MW3 15:00	7.3	59.8	<0.2	660	285	<1	285	33.5	89.7	25.2	76.7	6.3	0.3
4	MW4 14:05	7.5	79.1	<0.2	605	286	<1	286	32.8	78.2	21.7	65.9	4.6	1.6

*See external laboratory documentation

NOTE: For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO_3 to pH <2

ND = None Detected

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

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Records retained for 5 yrs.

Approved By: ______________________

ELAP Certification #1595

Cemex Construction Material LP #13588/08
Attn Gerald Coburn
Project: Stillwell Project-Domestic Well Monitoring

basic laboratory
www.basiclab.com
phone 530.243.7234 fax 530.243.7494
2218 Railroad Avenue
Redding, California 96001

Report To: DELLAVALLE LABORATORY, INC
1910 W MCKINLEY, SUITE 110
FRESNO, CA 93728
Attention: DELLAVALLE LABORATORY, INC
Project: GENERAL TESTING 108518

Lab No: 7100307
Reported: 10/19/07
Phone: (559) 233-6129
P.O. # 24974

General Chemistry

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
108518-1 WELLER Water (7100307-01) Sampled:10/08/07 13:00 Received:10/09/07 10:20									
Ferrous Iron	ug/l	ND		20	50	HACH 8146	10/09/07	10/09/07	B7J0220
108518-2 STILLWELL Water (7100307-02) Sampled:10/08/07 12:50 Received:10/09/07 10:20									
Ferrous Iron	ug/l	ND		20	50	HACH 8146	10/09/07	10/09/07	B7J0220
108518-3 MORTON Water (7100307-03) Sampled:10/08/07 12:40 Received:10/09/07 10:20									
Ferrous Iron	ug/l	ND		20	50	HACH 8146	10/09/07	10/09/07	B7J0220
108518-4 CAINES Water (7100307-04) Sampled:10/08/07 12:30 Received:10/09/07 10:20									
Ferrous Iron	ug/l	ND		20	50	HACH 8146	10/09/07	10/09/07	B7J0220

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
<	Less than reporting limit
≤	Less than or equal to reporting limit
>	Greater than reporting limit
≥	Greater than or equal to reporting limit
MDL	Method Detection Limit
RL/ML	Minimum Level of Quantitation
MCL/AL	Maxium Contaminant Level/Action Level
mg/kg	Results reported as wet weight
TTLC	Total Threshold Limit Concentration
STLC	Soluble Threshold Limit Concentration
TCLP	Toxicity Characteristic Leachate Procedure

Approved By

Basic Laboratory, Inc.
California D.O.H.S. Cert #1677

DELLAVALLE®
Laboratory, Inc.
Chemists and Consultants

July 20, 2006

Cemex #13588
13475 N Friant Rd
Friant, CA 93626

Re: Lab No. 104616

Dear Gerald:

Enclosed are the results for the annual monitoring well water samples recently collected on June 14, 2007.

If you have any questions, please call me.

Respectfully,

Ben Nydam

Ben Nydam
Irrigation Specialist, BS, CCA

BN:lf

Enclosures

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 104616
Sample Date 6/14/2007
Sample Time
Submitted Date 6/14/2007
Submitted by G Coburn/A Light/Del-Tech
Reported Date 6/29/2007
Location/Project Stillwell Proj-GW Monitoring
Copy To
Fax
e-mail

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500					0.30
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.004
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.01
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	4500Cl C	4500SO4 E	4500NO3 E	4500NO3 E	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA-->						300	300	300	300		200.7	200.7	200.7	200.7	
Analysis Date:	6/15/2007	6/16/2007	6/16/2007	6/16/2007	6/16/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/25/2007
001 MW 1 14:10	7.6	141	<1	<1	141	12.4	37.2	0.4	1.59	248	40.4	7.1	24	2.0	1.69
002 MW 2 13:43	8.1	228	<1	<1	228	21.7	107	14.8	65.5	515	60.4	29.1	49	5.6	15.4
003 MW 3 12:45	7.7	109	<1	<1	109	13.4	27.1	1.5	6.78	205	30.4	8.6	17	1.6	0.46
004 MW 4 12:20	8.0	234	<1	<1	234	38.7	79.4	12.3	54.6	512	59.5	19.3	63	2.8	1.97

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

Approved By: ______________________

ELAP Certification #1595

Dellavalle Laboratory, Inc.
Chemists and Consultants
1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 108120
Sample Date 9/25/2007
Sample Time 10:45
Submitted Date 9/25/2007
Submitted by Gerald Coburn
Reported Date 10/4/2007
Location/Project Stillwell Project-Domestic Well Monitoring
Copy To
Fax
e-mail

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO_4	NO_3-N	NO_3	TDS	**Ca**	**Mg**	**Na**
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500			
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	4500Cl C	4500SO4 E	4500NO3 E	4500NO3 E	2540 C	3120 B	3120 B	3120 B
EPA-->						300	300	300	300		200.7	200.7	200.7
Analysis Date:	9/27/2007	10/1/2007	10/1/2007	10/1/2007	10/1/2007	9/26/2007	9/26/2007	9/26/2007	9/26/2007	10/1/2007	9/26/2007	9/26/2007	9/26/2007
001 Weller-Domestic Well 10:45	7.1	152	<1	<1	152	17.7	61.2	15.9	70.3	295	42.6	16.8	27
002 Stillwell-Domestic Well 10:30	7.0	183	<1	<1	183	30.5	110	17.7	78.5	425	61.8	22.2	32
003 Morton-Domestic Well 10:20	7.2	235	<1	<1	235	24.4	78.7	28.1	124	580	83.9	24.6	64
004 Cairnes-Domestic Well 10:10	7.2	218	<1	<1	218	75.5	107	18.4	81.5	562	82.9	23.4	53

*See external laboratory documentation

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SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

Approved By: ______________________

ELAP Certification #1595

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Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No.	108120
Sample Date	9/25/2007
Sample Time	10:45
Submitted Date	9/25/2007
Submitted by	Gerald Coburn
Reported Date	10/4/2007
Location/Project	Stillwell Project-Domestic Well Monitoring
Copy To	
Fax	
e-mail	

	K	Total Fe
	mg/L	mg/L
MCL-->		0.30
MDL-->	0.3	0.004
RL-->	0.5	0.01
SM-->	3120 B	3120 B
EPA-->	200.7	
Analysis Date:	9/26/2007	10/1/2007
001 Weller-Domestic Well 10:45	4.7	0.48
002 Stillwell-Domestic Well 10:30	2.6	0.21
003 Morton-Domestic Well 10:20	4.1	0.15
004 Cairnes-Domestic Well 10:10	3.0	0.25

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Summary of Groundwater Monitoring Well Analysis
Cemex

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

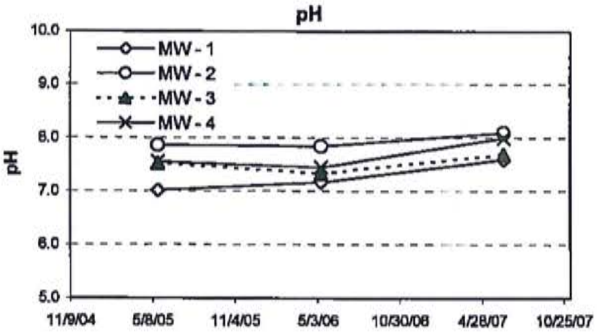
				mg/l														
Lab No.	Date	TIME	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO3 as $CaCO_3$	HCO3 as CaCO3	Cl	SO_4	NO_3-N	NO_3	TDS	**Ca**	**Mg**	**Na**	**K**	Total Fe
MW - 1																	
85263	5/19/05	11:08 AM	7.0	101	<1	<1	101	17.6	43.5	3.9	17.1	206	33.3	6.4	29.1	2.5	0.9
93772	5/11/06	5:00 PM	7.2	126		<1	126	15.8	<0.2	5.1	22.6	263	45.0	8.5	26.4	3.2	0.2
104616	6/14/07	2:10 PM	7.6	141	<1	<1	141	12.4	37.2	0.4	1.59	248	40.4	7.1	24.0	2.0	1.7
MW - 2																	
85263	5/19/05	12:24 PM	7.9	179		<1	179	24.8	127	15.3	67.7	489	55.3	30.2	60.6	6.1	4.3
93772	5/11/06	4:24 PM	7.8	259		<1	259	20.5	<0.2	11.9	52.5	613	61.8	30.2	48.8	6.3	3.1
104616	6/14/07	1:43 PM	8.1	228	<1	<1	228	21.7	107	14.8	65.5	515	60.4	29.1	49.0	5.6	15.4
MW - 3																	
85263	5/19/05	12:48 PM	7.5	293		<1	293	46.1	143	10.0	44.3	652	92.3	25.4	90.2	5.0	0.5
93772	5/11/06	3:00 PM	7.3	285		<1	285	33.5	<0.2	13.5	59.8	660	90	25.2	76.7	6.3	0.3
104616	6/14/07	12:45 PM	7.7	109	<1	<1	109	13.4	27.1	1.5	6.78	205	30.4	8.6	17.0	1.6	0.5
MW - 4																	
85263	5/19/05	1:20 PM	7.6	233		<1	233	34.9	108	18.8	83.5	559	81.2	21.5	74.0	3.5	2.4
93772	5/11/06	2:05 PM	7.5	286		<1	286	32.8	<0.2	17.9	79.1	605	78.2	21.7	65.9	4.6	1.6
104616	6/14/07	12:20 PM	8.0	234	<1	<1	234	38.7	79.4	12.3	54.6	512	59.5	19.3	63.0	2.8	2.0

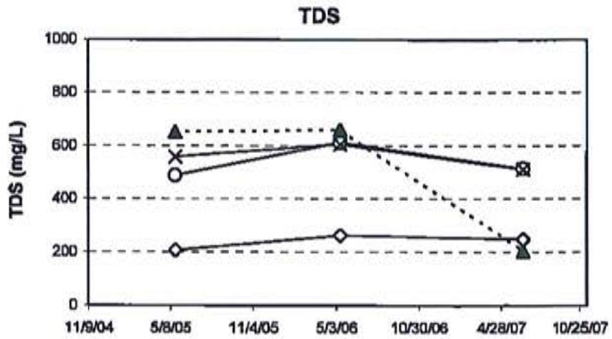
Dissolved metals (**bolded**) were filtered.

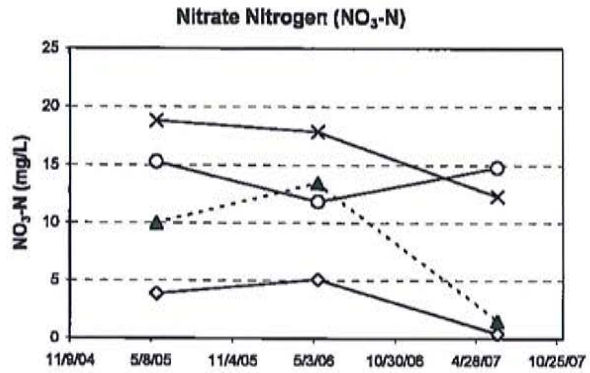
F:\Client C\CEMEX #13588\2007\[MW Analysis Summary 05-07.xls]Table

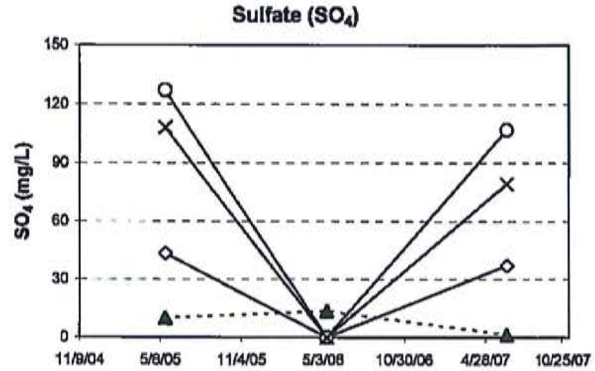
DELLAVALLE Laboratory, Inc.
Chemists and Consultants

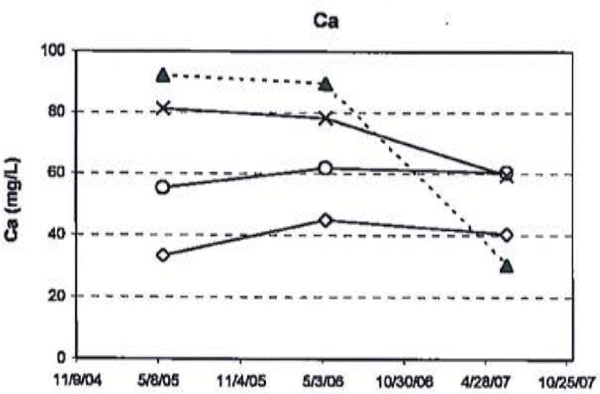
Summary of Groundwater Monitoring Well Analysis Cemex

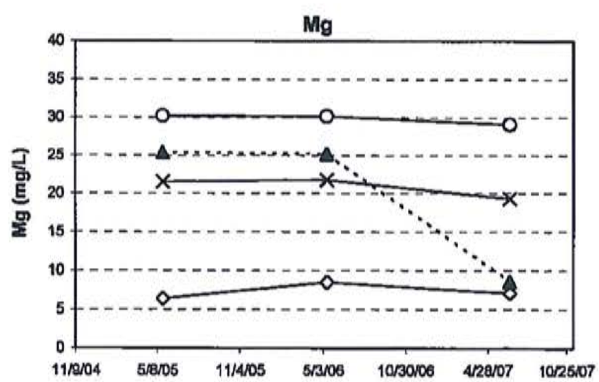


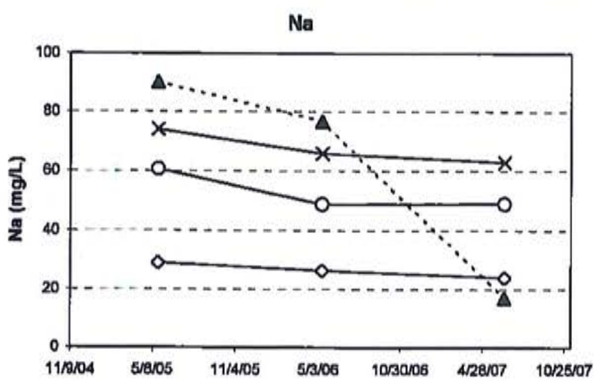


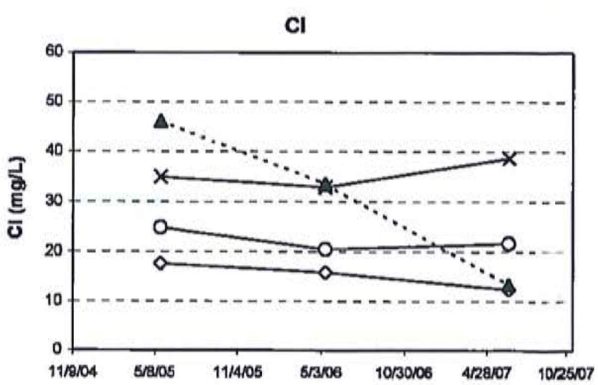












DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

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Cemex
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08

Material Submitted: Water

Lab No. 104616
Sample Date 6/14/2007
Sample Time
Submitted Date 6/14/2007
Submitted by G Coburn/A Light/Del-Tech
Reported Date 6/29/2007
Location/Project Stillwell Proj-GW Monitoring
Copy To
Fax
e-mail

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500					0.30
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.004
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.01
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	4500Cl C	4500SO4 E	4500NO3 E	4500NO3 E	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA-->						300	300	300	300		200.7	200.7	200.7	200.7	
Analysis Date:	6/15/2007	6/16/2007	6/16/2007	6/16/2007	6/16/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/25/2007
001 MW 1 14:10	7.6	141	<1	<1	141	12.4	37.2	0.4	1.59	248	40.4	7.1	24	2.0	1.69
002 MW 2 13:43	8.1	228	<1	<1	228	21.7	107	14.8	65.5	515	60.4	29.1	49	5.6	15.4
003 MW 3 12:45	7.7	109	<1	<1	109	13.4	27.1	1.5	6.78	205	30.4	8.6	17	1.6	0.46
004 MW 4 12:20	8.0	234	<1	<1	234	38.7	79.4	12.3	54.6	512	59.5	19.3	63	2.8	1.97

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

Approved By: ____________________

ELAP Certification #1595

DELLAVALLE®
Laboratory, Inc.
Chemists and Consultants

September 23, 2008

Cemex

Lab # : 120659,
Dear Gerald,

Enclosed are the results for the annual monitoring well water samples recently collected on September 9, 2008

203

Respectfully,

Ben Nydam

Ben Nydam
Certified Crop Advisor # 22552
Dellavalle Laboratory, Inc.

[illegible]

Invoicing:

4 - Monitoring well: purging, monitoring of field parameters (PH, EC, DO), logging, data collection, water sampling @ [illegible] = $[illegible]

4 - Water sample analysis for pH, NO3, SO4, TDS, CO3, HCO3, Cl, Ca, Mg, Na, TK, Total Alkalinity Total Iron, Ferrous Iron @ $ 208.40 each = $ 833.60

$ [illegible]

Dellavalle Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120659
Sample Date 9/9/2008
Sample Time
Submitted Date 9/9/2008
Submitted by Gerald Coburn-Plant Manager
Reported Date 9/23/2008
Location/Project Stillwell Project - Domestic Well Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Total Ca	Total Mg	Total Na
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL—>						250	250	10	45	500			
MDL—>			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	1.5
RL—>	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1
SM—>	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B
EPA—>						300	300	300	300				
Analysis Date:	9/9/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/9/2008	9/11/2008	9/11/2008	9/11/2008
001 Weller - Domestic Well 08:25	7.5	80	<1	<1	80	7.9	23.0	2.8	12.3	148	23.8	4.1	11
002 Stillwell - Domestic Well 08:10	7.2	180	<1	<1	180	18.8	49.7	17.8	78.8	432	65.6	23.0	32
003 Morton - Domestic Well 07:55	7.4	253	<1	<1	253	39.2	95.4	16.9	74.7	592	73.4	20.9	51
004 Caines - Domestic Well 07:45	6.9	222	<1	<1	222	23.8	74.9	26.5	118	548	78.3	21.6	47

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________________

ELAP Certification #1595

Wetlab Results

ARF: 56872

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: ANGELA SIMPSON

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AX83187	-Client Sample ID: 120142-1 MW1		-Sample Collection Date: 08/28/08		Project: 120142	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	08/29/08	08/29/08
APPL ID: AX83188	-Client Sample ID: 120142-2 MW2		-Sample Collection Date: 08/28/08		Project: 120142	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	08/29/08	08/29/08
APPL ID: AX83189	-Client Sample ID: 120142-3 MW3		-Sample Collection Date: 08/28/08		Project: 120142	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	08/29/08	08/29/08
APPL ID: AX83190	-Client Sample ID: 120142-4 MW4		-Sample Collection Date: 08/28/08		Project: 120142	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	08/29/08	08/29/08

CEMEX - Lemon Cove Plant #133 - Gerald Coburn - #13588/08
Project: Stillwell Project - Domestic Well Monitoring

Wetlab Results

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

ARF: 56935

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: ANGELA SIMPSON

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AX83500	-Client Sample ID: 120659-1 WELLER DOMESTIC		-Sample Collection Date. 09/09/08		Project: 120659	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/09/08	09/09/08
APPL ID: AX83501	-Client Sample ID: 120659-2 STILLWELL DOMESTI		-Sample Collection Date: 09/09/08		Project: 120659	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/09/08	09/09/08
APPL ID: AX83502	-Client Sample ID: 120659-3 MORTON DOMESTIC		-Sample Collection Date: 09/09/08		Project: 120659	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/09/08	09/09/08
APPL ID: AX83503	-Client Sample ID: 120659-4 CAINES DOMESTIC W		-Sample Collection Date: 09/09/08		Project: 120659	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/09/08	09/09/08

These results are preliminary and represent information available on 9/10/08 at 9:48am

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Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120659
Sample Date 9/9/2008
Sample Time
Submitted Date 9/9/2008
Submitted by Gerald Coburn-Plant Manager
Reported Date 9/23/2008
Location/Project Stillwell Project - Domestic Well Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	Total Fe	Total K	Dissolved *Fe
	mg/L	mg/L	
MCL-->	0.30		
MDL-->	0.004	0.3	
RL-->	0.01	0.5	
SM-->	3120 B	3120 B	
EPA-->			
Analysis Date:	9/11/2008	9/11/2008	Send Out
001 Weller - Domestic Well 08:25	1.33	1.9	*
002 Stillwell - Domestic Well 08:10	2.96	3.4	*
003 Morton - Domestic Well 07:55	0.22	3.8	*
004 Caines - Domestic Well 07:45	0.15	2.8	*

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Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120142
Sample Date 8/28/2008
Sample Time
Submitted Date 8/28/2008
Submitted by Gerald Coburn-Plant Mgr
Reported Date 9/16/2008
Location/Project Stillwell Proj-GW Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500					0.30
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.004
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.01
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA-->						300	300	300	300						
Analysis Date:	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	9/4/2008	9/4/2008	9/4/2008	9/4/2008	9/4/2008
001 MW-1 14:47	6.8	89	<1	<1	89	3.1	7.1	0.5	2.03	596	25.4	4.3	10	2.2	2.42
002 MW-2 14:21	7.9	192	<1	<1	192	20.6	99.6	5.5	24.3	375	37.2	29.8	52	8.1	2.91
003 MW-3 13:30	7.2	111	<1	<1	111	0.8	1.6	<0.1	<0.45	132	23.3	6.4	12	2.0	0.42
004 MW-4 13:00	7.5	222	<1	<1	222	355	501	68.7	304	580	85.0	24.2	78	4.2	2.04

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ______________________

ELAP Certification #1595

CEMEX Construction Materials LP #13588/08

Wetlab Results

ARF: 59643

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Peggy Miller

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY02374 -Client Sample ID: 134963-1 MW-1			-Sample Collection Date: 08/31/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/01/09	09/01/09
APPL ID: AY02375 -Client Sample ID: 134963-2 MW-2			-Sample Collection Date: 08/31/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/01/09	09/01/09
APPL ID: AY02376 -Client Sample ID: 134963-3 MW-3			-Sample Collection Date: 08/31/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/01/09	09/01/09
APPL ID: AY02377 -Client Sample ID: 134963-4 MW-4			-Sample Collection Date: 08/31/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/01/09	09/01/09

Wetlab Results

ARF: 59765

Cemex #13588/08
Proj: Stillwell Domestic Well

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Peggy Miller

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY03302 -Client Sample ID: 135564-1			-Sample Collection Date: 09/15/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/15/09	09/15/09
APPL ID: AY03303 -Client Sample ID: 135564-2			-Sample Collection Date: 09/15/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/15/09	09/15/09
APPL ID: AY03304 -Client Sample ID: 135564-3			-Sample Collection Date: 09/15/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/15/09	09/15/09
APPL ID: AY03305 -Client Sample ID: 135564-4			-Sample Collection Date: 09/15/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/15/09	09/15/09

Printed: 09/15/09 3:11:41 PM

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Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 135904
Sample Date 9/22/2009
Sample Time
Submitted Date 9/23/2009
Submitted by
Reported Date 10/5/2009
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO4	NO3-N	NO3	Dissolved Solids TDS	Ca	Mg	Na	K	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500					0.00
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.281
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.5
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA-->						300	300	300	300		0.0	0.0	0.0	0.0	
Analysis Date:	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/25/2009	9/24/2009	9/24/2009	9/24/2009	9/24/2009	9/29/2009
001 MW 1 14:38	6.4	165	<1	<1	165	17.0	25.0	0.8	3.40	307	43.6	10.1	26	6.0	1.52
002 MW 2 13:56	7.6	165	<1	<1	165	20.5	106	0.6	2.61	360	22.8	27.4	52	7.8	5.93
003 MW 3 13:10	6.4	98	<1	<1	98	13.7	19.7	0.4	1.76	195	26.7	6.9	16	3.3	0.56
004 MW 4 12:20	6.9	241	<1	<1	241	76.8	90.8	13.2	58.6	620	79.1	26.7	81	5.2	2.57

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 135564
Sample Date 9/15/2009
Sample Time
Submitted Date 9/15/2009
Submitted by
Reported Date 9/28/2009
Location/Project Stillwell Domestic Wells
Copy To
Fax
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO4	NO3-N	NO3	Dissolved Solids TDS	Total Ca	Total Mg	Total Na	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL—>						250	250	10	45	500				0.00
MDL—>			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.4	0.1	0.4	0.281
RL—>	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.5	0.1	1	0.5
SM—>	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B
EPA—>						300	300	300	300					
Analysis Date:	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/17/2009	9/17/2009	9/17/2009	9/17/2009	9/17/2009
001 Weller 10:30	6.5	129	<1	<1	129	12.6	49.3	6.4	28.5	300	37.5	12.8	24	0.24
002 Stillwell 10:20	6.7	179	<1	<1	179	22.5	59.0	19.4	85.8	477	60.9	21.6	29	0.08
003 Morton 10:10	6.9	242	<1	<1	242	34.4	87.0	10.6	47.2	557	66.9	19.2	55	0.11
004 Caimes 10:00	6.9	196	<1	<1	196	17.1	67.7	25.2	112	540	63.4	17.8	48	0.05

*See external laboratory documentation
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
EPA = Environmental Protection Agency methods used unless otherwise indicated.
Dissolved metals **(bolded)** were filtered.
MBAS molecular weight = 340 grams.
QA/QC available upon request.

Approved By: ______________________
ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 135564
Sample Date 9/15/2009
Sample Time
Submitted Date 9/15/2009
Submitted by Gerald Coburn
Reported Date 9/28/2009
Location/Project Stillwell Domestic Wells
Copy To
Fax
e-mail pete.locastro@cemex.com

	Total K mg/L	*Ferrous Fe
MCL-->		
MDL-->	0.2	
RL-->	0.5	
SM-->	3120 B	
EPA-->		
Analysis Date:	9/17/2009	Send Out
001 Weller 10:30	3.6	*
002 Stillwell 10:20	3.7	*
003 Morton 10:10	5.0	*
004 Cairnes 10:00	3.1	*

Wetlab Results

ARF: 61932

Cemex #13588/58
Proj: Stillwell Proj - GW Monitoring

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY17210	-Client Sample ID: 144382-1 MW1		-Sample Collection Date: 06/23/10		Project: STILLWELL PROJ.-GW	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	06/23/10	06/23/10
APPL ID: AY17211	-Client Sample ID: 144382-2 MW2		-Sample Collection Date: 06/23/10		Project: STILLWELL PROJ.-GW	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	06/23/10	06/23/10
APPL ID: AY17212	-Client Sample ID: 144382-3 MW3		-Sample Collection Date: 06/23/10		Project: STILLWELL PROJ.-GW	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	06/23/10	06/23/10
APPL ID: AY17213	-Client Sample ID: 144382-4 MW4		-Sample Collection Date: 06/23/10		Project: STILLWELL PROJ.-GW	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	06/23/10	06/23/10

Printed: 06/29/10 10:07:27 AM

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Report of Water Analysis

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FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 144382
Sample Date 6/23/2010
Sample Time
Submitted Date 6/23/2010
Submitted by Pete Locastro
Reported Date 7/8/2010
Location/Project Stillwell Project - GW Monitoring
Copy To
Fax
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO3 as $CaCO_3$	HCO3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	**Ca**	**Mg**	Na	K	Total Fe	*Ferous Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL-->						250	250	10.2	45.0	500					0.3	
MDL-->			1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.28	
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10.0	0.1	0.1	1.0	0.5	0.5	
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	SM 4500-Cl	EM 4500-SO4	4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA-->						300	300	300	300							
Analysis Date:	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	7/13/2010	Send Out
001 MW 1 @ 10:25	7.2	134	<1	<1	134	18.9	34.6	0.4	1.69	257	42.0	10.4	23	3.3	0.74	*
002 MW 2 @ 09:47	8.2	154	<1	<1	154	21.6	94.6	0.8	3.58	340	15.9	26.4	55	8.7	1.78	*
003 MW 3 @ 09:03	7.1	112	<1	<1	112	18.4	29.0	0.6	2.75	220	35.4	9.1	17	2.4	0.36	*
004 MW 4 @ 08:40	7.2	272	<1	<1	272	205	126	16.9	74.9	910	132	38.7	132	5.6	1.79	*

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________________

ELAP Certification #1595

Wetlab Results

Cemex #13588/08
Proj: Stillwell Domestic Well

ARF: 63597

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY29764	-Client Sample ID: 152347-1		-Sample Collection Date: 01/10/11		Project: STILL WELL DOMESTI	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	01/10/11	01/10/11
APPL ID: AY29765	-Client Sample ID: 152347-2		-Sample Collection Date: 01/10/11		Project: STILL WELL DOMESTI	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	01/10/11	01/10/11
APPL ID: AY29766	-Client Sample ID: 152347-3		-Sample Collection Date: 01/10/11		Project: STILL WELL DOMESTI	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	01/10/11	01/10/11
APPL ID: AY29767	-Client Sample ID: 152347-4		-Sample Collection Date: 01/10/11		Project: STILL WELL DOMESTI	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	01/10/11	01/10/11

Printed: 01/11/11 8:36:49 AM

Wetlab Results

ARF: 65082

Cemex Construction #13588/08
Proj: Stillwell Project-DW Monitoring

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY41173	-Client Sample ID: 159705-1 MW-1		-Sample Collection Date: 07/11/11		Project: STILLWATER PROJECT	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	07/12/11	07/12/11
APPL ID: AY41174	-Client Sample ID: 159705-2 MW-2		-Sample Collection Date: 07/11/11		Project: STILLWATER PROJECT	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	07/12/11	07/12/11
APPL ID: AY41175	-Client Sample ID: 159705-3 MW-3		-Sample Collection Date: 07/11/11		Project: STILLWATER PROJECT	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	07/12/11	07/12/11
APPL ID: AY41176	-Client Sample ID: 159705-4 MW-4		-Sample Collection Date: 07/11/11		Project: STILLWATER PROJECT	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	07/12/11	07/12/11

Printed: 07/13/11 9:15:00 AM

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 159705
Sample Date 7/11/2011
Sample Time
Submitted Date 7/12/2011
Submitted by Pete Locastro
Reported Date 8/1/2011
Location/Project Stillwell Project-Domestic Well Monitoring
Copy To
Fax (925) 426-2226
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO3 as $CaCO_3$	HCO3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10.2	45.0	500			
MDL-->			1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10.0	0.1	0.1	1.0
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	SM 4500-Cl E	M 4500-SO4	Lat. 10.107.05.1.A	Lat. 10.107.05.1.A	2540 C	3120 B	3120 B	3120 B
EPA-->						300	300	300	300				
Analysis Date:	7/13/2011	7/13/2011	7/13/2011	7/13/2011	7/13/2011	7/19/2011	7/19/2011	7/19/2011	7/19/2011	7/22/2011	7/13/2011	7/13/2011	7/13/2011
001 MW-1 @ 17:00	7.2	145	<1	<1	145	22.9	48.8	0.6	2.83	320	50.4	12.1	28
002 MW-2 @ 16:39	7.9	158	<1	<1	158	18.9	89.4	1.9	8.59	440	22.4	28.6	51
003 MW-3 @ 16:14	7.2	530	<1	<1	530	217	124	18.0	79.5	1190	237	87.8	70
004 MW-4 @ 15:55	7.4	233	<1	<1	233	92.2	90.4	15.2	67.4	687	74.6	27.1	107

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.
Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________________

ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 159705
Sample Date 7/11/2011
Sample Time
Submitted Date 7/12/2011
Submitted by Pete Locastro
Reported Date 8/1/2011
Location/Project Stillwell Project-Domestic Well Monitoring
Copy To
Fax (925) 426-2226
e-mail pete.locastro@cemex.com

	K	Total Fe	*Ferous Fe
	mg/L	mg/L	
MCL-->		0.3	
MDL-->	0.3	0.004	
RL-->	0.5	0.01	
SM-->	3120 B	3120 B	
EPA-->			
Analysis Date:	7/13/2011	7/15/2011	Send Out
001 MW-1 @ 17:00	3.5	0.11	*
002 MW-2 @ 16:39	7.2	2.02	*
003 MW-3 @ 16:14	4.6	1.05	*
004 MW-4 @ 15:55	5.3	1.99	*

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Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 152347
Sample Date 1/10/2011
Sample Time
Submitted Date 1/10/2011
Submitted by Pete Locastro
Reported Date 1/26/2011
Location/Project Stillwell Domestic Wells
Copy To
Fax
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO3 as $CaCO_3$	HCO3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10.2	45.0	500			
MDL-->			1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10.0	0.1	0.1	1.0
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	SM 4500-Cl	EM 4500-SO4	Lat. 10.107.05.1.A	Lat. 10.107.05.1.A	2540 C	3120 B	3120 B	3120 B
EPA-->						300	300	300	300				
Analysis Date:	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/12/2011	1/12/2011	1/11/2011	1/25/2011	1/18/2011	1/12/2011	1/12/2011	1/12/2011
001 Weller 12:40	7.3	54	<1	<1	54	1.7	1.6	<0.1	<0.45	135	6.0	5.1	11
002 Stillwell 12:58	7.3	54	<1	<1	54	2.0	1.5	<0.1	<0.45	135	5.9	5.0	11
003 Morton 11:39	7.6	208	<1	<1	208	33.4	75.6	11.0	48.9	505	68.3	19.8	58
004 Cairnes 11:30	7.4	181	<1	<1	181	17.2	55.3	23.9	106	515	65.6	17.6	53

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________________

ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants
1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-612[illegible]

Report of Water Analysis

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 152347
Sample Date 1/10/2011
Sample Time
Submitted Date 1/10/2011
Submitted by Pete Locastro
Reported Date 1/26/2011
Location/Project Stillwell Domestic Wells
Copy To
Fax
e-mail pete.locastro@cemex.com

	K	Total Fe	*Ferous Fe
	mg/L	mg/L	
MCL-->		0.3	
MDL-->	0.3	0.004	
RL-->	0.5	0.01	
SM-->	3120 B	3120 B	
EPA-->			
Analysis Date:	1/12/2011	1/12/2011	Send Out
001 Weller 12:40	1.3	<0.10	*
002 Stillwell 12:58	1.2	<0.10	*
003 Morton 11:39	3.5	<0.10	*
004 Cairnes 11:30	2.4	<0.10	*

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Bacteriological Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9898 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Lab No. 152342
Sample Date 1/10/2011
Sample Time 11:39
Sampler P. Proctor
Submitted Date 1/10/2011
Submitted by Gerald Coburn
Reported Date 1/11/2011
Location/Project Routine
Copy To
Fax
email pete.locastro@cemex.com

Material Submitted:

	Date Started	Time Started	Rec'd Temp °C	Total MPN Coliform per 100 ml	MPN E-Coli per 100 ml	Residual Chlorine mg/L
RL-->				< 1	< 1	
SM-->				9223	9223	Field test
Analysis Date:	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/11/2011	
001 Morton	1/10/2011	16:00	5.9	<1	<1	

ND = None Detected
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Records retained for 5 yrs.
mg/L = ppm

Approved By: ____________________
ELAP Certification #1595

Cemex #13588/08
Proj: Stillwell Proj GW Monitoring

Wetlab Results

ARF: 67538

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY59312	-Client Sample ID: 169985-1		-Sample Collection Date: 04/18/12			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/19/12	04/19/12
APPL ID: AY59313	-Client Sample ID: 169985-2		-Sample Collection Date: 04/18/12			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/19/12	04/19/12
APPL ID: AY59314	-Client Sample ID: 169985-3		-Sample Collection Date: 04/18/12			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/19/12	04/19/12
APPL ID: AY59315	-Client Sample ID: 169985-4		-Sample Collection Date: 04/18/12			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/19/12	04/19/12

Printed: 05/07/12 3:50:40 PM

Cemex #13588/08
Proj: Stillwell Domestic Well

Wetlab Results

ARF: 67711

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY60853	-Client Sample ID: 171014-1		-Sample Collection Date: 05/09/12		Project: Stillwell Domestic Well	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	05/10/12	05/10/12
APPL ID: AY60854	-Client Sample ID: 171014-2		-Sample Collection Date: 05/09/12		Project: Stillwell Domestic Well	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	05/10/12	05/10/12
APPL ID: AY60855	-Client Sample ID: 171014-3		-Sample Collection Date: 05/09/12		Project: Stillwell Domestic Well	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	05/10/12	05/10/12
APPL ID: AY60856	-Client Sample ID: 171014-4		-Sample Collection Date: 05/09/12		Project: Stillwell Domestic Well	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	05/10/12	05/10/12

Printed: 05/30/12 11:33:25 AM

Report of Water Analysis

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 171014
Sampler N. Olson
Submitted Date 05/09/12
Submitted by Ramon Neilson
Reported Date 05/29/12
Location/Project Stillwell Domestic Wells
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->								250	250	10.2	45.0	500					0.3
MDL-->					1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004
RL-->			1.0 to 14.0	10	1	1.0	5	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1
SM-->			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA-->								300.0	300.0	300.0	300.0						
Analysis Date:			5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/21/2012	5/14/2012	5/14/2012	5/14/2012	5/14/2012	5/14/2012
Analysis Time:			11:03	11:03	11:03	11:03	11:03	17:58	17:58	17:58	17:58	4:00	12:19	12:19	12:19	12:19	15:58
001 Weller	05/09/12	10:00	6.8	133	<1	<1	133	16.2	38.3	6.9	30.6	1030	36.2	15.8	24	4.1	<0.10
002 Stillwell	05/09/12	9:25	6.8	171	<1	<1	171	22.4	55.6	21.6	95.6	212	62.5	23.6	32	2.5	<0.10
003 Morton	05/09/12	10:50	7.1	214	<1	<1	214	19.5	66.9	19.6	86.9	175	67.0	20.0	56	3.6	0.15
004 Cairnes	05/09/12	10:30	7.0	201	<1	<1	201	17.0	63.4	26.7	118	580	75.7	22.1	51	2.6	<0.10

*See external laboratory documentation
pH analyzed ouside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals (**bolded**) were filtered.
QA/QC available upon request.

Approved By: ______________________
ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

		Date Sampled	Time Sampled
	MCL—>		
	MDL—>		
	RL—>		
	SM—>		
	EPA—>		
	Analysis Date:		
	Analysis Time:		
001	Weller	05/09/12	10:00
002	Stillwell	05/09/12	9:25
003	Morton	05/09/12	10:50
004	Calmes	05/09/12	10:30

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 169985
Sampler Del-Tech/Ashley Light
Submitted Date 04/19/12
Submitted by Ramon Neilson
Reported Date 5/14/12
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->								250	250	10.2	45.0	500				
MDL-->					1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3
RL-->			1.0 to 14.0	10	1	1.0	5	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5
SM-->			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B
EPA-->								300.0	300.0	300.0	300.0					
Analysis Date:			4/19/2012	4/19/2012	4/19/2012	4/19/2012	4/19/2012	4/18/2012	4/18/2012	4/18/2012	4/18/2012	5/9/2012	5/1/2012	5/1/2012	5/1/2012	5/1/2012
Analysis Time:												12:30	10:15	10:15	10:15	10:15
001 MW 1	04/18/12	18:25	6.9	179	<1	<1	179	26.0	52.4	0.9	4.00	363	62.2	15.2	34	4.1
002 MW 2	04/18/12	18:05	7.5	162	<1	<1	162	22.7	87.7	5.3	23.5	373	30.7	27.6	54	6.5
003 MW 3	04/18/12	17:39	6.8	161	<1	<1	161	29.8	49.8	2.7	11.9	343	56.1	14.7	34	3.3
004 MW 4	04/18/12	17:17	8.0	259	<1	<1	259	63.3	81.8	15.2	67.3	620	83.8	25.6	86	4.9

*See external laboratory documentation
pH analyzed ouside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; RL = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals (**bolded**) were filtered.
QA/QC available upon request.

Approved By: ______________________

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 169985
Sampler Del-Tech/Ashley Light
Submitted Date 04/19/12
Submitted by Ramon Neilson
Reported Date 5/14/12
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	Total Fe	*Ferrous Fe
			mg/L	
MCL-->			0.3	
MDL-->			0.004	
RL-->			0.1	
SM-->			3120 B	
EPA-->				
Analysis Date:			5/1/2012	Send Out
Analysis Time:			13:26	
001 MW 1	04/18/12	18:25	2.14	*
002 MW 2	04/18/12	18:05	1.02	*
003 MW 3	04/18/12	17:39	<0.10	*
004 MW 4	04/18/12	17:17	0.66	*

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9696 - (559) 233-6129

Lab No. 169985
Sampler Del-Tech/Ashley Light
Submitted Date 04/19/12
Submitted by Ramon Neilson
Reported Date 5/14/12
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->								250	250	10.2	45.0	500				
MDL-->					1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3
RL-->			1.0 to 14.0	10	1	1.0	5	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5
SM-->			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B
EPA-->								300.0	300.0	300.0	300.0					
Analysis Date:			4/19/2012	4/19/2012	4/19/2012	4/19/2012	4/19/2012	4/18/2012	4/18/2012	4/18/2012	4/18/2012	5/9/2012	5/1/2012	5/1/2012	5/1/2012	5/1/2012
Analysis Time:												12:30	10:15	10:15	10:15	10:15

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Lab No. 169985
Sampler Del-Tech/Ashley Light
Submitted Date 04/19/12
Submitted by Ramon Neilson
Reported Date 5/14/12
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

Material Submitted: Water

	Date Sampled	Time Sampled	Total Fe mg/L	*Ferrous Fe
MCL-->			0.3	
MDL-->			0.004	
RL-->			0.1	
SM-->			3120 B	
EPA-->				
Analysis Date:			5/1/2012	Send Out
Analysis Time:			13:26	

Wetlab Results

ARF: 70419

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Cemex #13588/08
Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY78543	-Client Sample ID: 185149-1		-Sample Collection Date: 04/08/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/09/13	04/09/13
APPL ID: AY78544	-Client Sample ID: 185149-2		-Sample Collection Date: 04/08/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/09/13	04/09/13
APPL ID: AY78545	-Client Sample ID: 185149-3		-Sample Collection Date: 04/08/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/09/13	04/09/13
APPL ID: AY78546	-Client Sample ID: 185149-4		-Sample Collection Date: 04/08/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/09/13	04/09/13

Printed: 05/08/13 1:28:17 PM

Wetlab Results

ARF: 70959

CEMEX #13588/08
Project: Stillwell Project-
Groundwater Monitoring

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY81824	-Client Sample ID: 189742-1		-Sample Collection Date: 06/12/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	06/13/13	06/13/13
APPL ID: AY81825	-Client Sample ID: 189742-2		-Sample Collection Date: 06/12/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	06/13/13	06/13/13
APPL ID: AY81826	-Client Sample ID: 189742-3		-Sample Collection Date: 06/12/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	06/13/13	06/13/13
APPL ID: AY81827	-Client Sample ID: 189742-4		-Sample Collection Date: 06/12/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	06/13/13	06/13/13

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

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FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 185149
Sampler T. Cox
Submitted Date 4/8/2013
Submitted by Ramon Neilson
Reported Date 4/15/2013
Location/Project Stillwell Domestic Wells
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH unit	Total Alkalinity as $CaCO_3$ mg/L	OH as $CaCO_3$ mg/L	CO_3 as $CaCO_3$ mg/L	HCO_3 as $CaCO_3$ mg/L	Cl mg/L	SO_4 mg/L	NO_3-N mg/L	NO_3 mg/L	TDS mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Total Fe mg/L	*Ferrous Fe
MCL—>								250	250	10.0	45.0	500					0.3	
MDL—>					1.00	0.9	3.00	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL—>			1.0 to 14.0	10.0	1.00	1.0	5.00	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM—>			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA—>								300.0	300.0	300.0	300.0							
Analysis Date:			4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	Send Out
Analysis Time:			12:11	12:11	12:11	12:11	12:11	20:06	20:06	20:06	20:06	9:00	9:20	9:20	9:20	9:20	11:16	
001 Weller	4/8/2013	9:41	7.3	130	<1	<1	130	13.5	39.6	7.3	32.2	287	38.2	16.6	25	4.4	0.55	*
002 Stillwell	4/8/2013	9:06	7.1	173	<1	<1	173	18.0	51.7	20.5	90.7	460	68.7	25.8	33	2.8	<0.10	*
003 Morton	4/8/2013	10:05	7.4	232	<1	<1	232	27.0	74.0	17.8	78.8	653	74.4	23.3	58	3.9	<0.10	*
004 Caimes	4/8/2013	10:18	7.2	194	<1	<1	194	12.8	54.3	23.3	103	473	72.0	21.4	37	2.6	<0.10	*

*See external laboratory documentation
pH analyzed outside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals **(bolded)** were filtered.
QA/QC available upon request.

Approved By: ______________________

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

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Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 185149
Sampler T. Cox
Submitted Date 4/8/2013
Submitted by Ramon Neilson
Reported Date 4/15/2013
Location/Project Stillwell Domestic Wells
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe	*Ferrous Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL-->								250	250	10.0	45.0	500					0.3	
MDL-->					1.00	0.9	3.00	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL-->			1.0 to 14.0	10.0	1.00	1.0	5.00	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM-->			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA-->								300.0	300.0	300.0	300.0							
Analysis Date:			4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	Send Out
Analysis Time:			12:11	12:11	12:11	12:11	12:11	20:06	20:06	20:06	20:06	9:00	9:20	9:20	9:20	9:20	11:16	

ELAP Certification #1595

Report of Water Analysis

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

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FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 189742
Sampler Don Light/ Deltech
Submitted Date 6/12/2013
Submitted by Ramon Neilson
Reported Date 6/24/2013
Location/Project Stillwell Project- Groundwater Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4-S	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe	*Ferrous Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL—>							250	83.3	250	10.0	45.0	500					0.3	
MDL—>					0.9	3.00	0.03	0.01	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL—>			1.0 to 14.0	10.0	1.0	5.00	0.1	0.07	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM—>			4500H B	2320 B	2320 B	2320 B						2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA—>							300.0	300.0	300.0	300.0	300.0							
Analysis Date:			6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	Send Out
Analysis Time:			9:10	9:10	9:10	9:10	17:04	17:04	17:04	17:04	17:04	2:51	10:41	10:41	10:41	10:41	13:32	
001 MW-1	6/12/2013	10:50	7.5	175	<1	175	25.5	19.0	57.0	3.0	13.3	497	55.9	13.8	34	3.9	<0.10	*
002 MW-2	6/12/2013	11:27	8.0	202	<1	202	18.8	24.2	72.5	10.0	44.2	570	49.8	27.2	54	6.5	0.94	*
003 MW-3	6/12/2013	11:50	7.1	133	<1	133	28.8	16.9	50.8	0.4	<2.00	313	46.7	11.3	30	3.2	<0.10	*
004 MW-4	6/12/2013	12:20	7.6	245	<1	245	75.4	20.6	61.8	16.9	75.0	870	80.8	23.6	81	4.9	1.51	*

*See external laboratory documentation
pH analyzed outside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals (**bolded**) were filtered.
QA/QC available upon request.

Approved By: ____________________

Report of Water Analysis

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

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13588
08

Material Submitted: Water

Lab No. 189742
Sampler Don Light/ Deltech
Submitted Date 6/12/2013
Submitted by Ramon Neilson
Reported Date 6/24/2013
Location/Project Stillwell Project- Groundwater Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4-S	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe	*Ferrous Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL—>							250	83.3	250	10.0	45.0	500					0.3	
MDL—>					0.9	3.00	0.03	0.01	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL—>			1.0 to 14.0	10.0	1.0	5.00	0.1	0.07	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM—>			4500H B	2320 B	2320 B	2320 B						2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA—>							300.0	300.0	300.0	300.0	300.0							
Analysis Date:			6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	Send Out
Analysis Time:			9:10	9:10	9:10	9:10	17:04	17:04	17:04	17:04	17:04	2:51	10:41	10:41	10:41	10:41	13:32	

ELAP Certification #1595

Wetlab Results

ARF: 73142

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

CEMEX #13588/08
Proj: Stillwell
Domestic Wells

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY95133 -Client Sample ID: 201932-1			-Sample Collection Date: 04/14/14		Project: Still Well DW	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/15/14	04/15/14
APPL ID: AY95134 -Client Sample ID: 201932-2			-Sample Collection Date: 04/14/14		Project: Still Well DW	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/15/14	04/15/14
APPL ID: AY95135 -Client Sample ID: 201932-3			-Sample Collection Date: 04/14/14		Project: Still Well DW	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/15/14	04/15/14
APPL ID: AY95136 -Client Sample ID: 201932-4			-Sample Collection Date: 04/14/14		Project: Still Well DW	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/15/14	04/15/14

Printed: 04/25/14 1:35:58 PM

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

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Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 201932
Sampler PFP/JP
Submitted Date 4/14/2014
Requested by Pete Locastro
Reported Date 4/28/2014
Location/Project Stillwell Domestic Wells
Copy To
Fax (925) 426-2226
e-mail pete.locastro/peterh.cotter@cemex.com

	Date Sampled	Time Sampled	pH unit	Total Alkalinity as $CaCO_3$ mg/L	OH as $CaCO_3$ mg/L	CO_3 as $CaCO_3$ mg/L	HCO_3 as $CaCO_3$ mg/L	Cl mg/L	SO_4 mg/L	NO_3-N mg/L	NO_3 mg/L	TDS mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Total Fe mg/L	*Ferrous Fe
MCL—>								250	250	10.0	45.0	500					0.3	
MDL—>					1.00	0.9	3.00	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL—>			1.0 to 14.0	10.0	1.00	1.0	5.00	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM—>			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA—>								300.0	300.0	300.0	300.0							
Analysis Date:			4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/25/2014	4/17/2014	4/17/2014	4/17/2014	4/17/2014	4/30/2014	Send Out
Analysis Time:			12:01	12:01	12:01	12:01	12:01	17:53	17:53	17:53	17:53	0:00	9:49	9:49	9:49	9:49	13:52	
001 Weller	4/14/14	11:10	7.3	128	<1	<1	128	13.6	41.0	6.9	30.4	363	39.4	16.2	26	4.0	1.62	*
002 Stillwell	4/14/14	10:30	7.5	176	<1	<1	176	17.2	64.2	19.2	85.0	520	66.8	24.1	33	2.2	<0.10	*
003 Morton	4/14/14	10:00	7.6	211	<1	<1	211	16.2	60.2	23.7	105	547	80.6	23.8	55	4.0	0.49	*
004 Cairnes	4/14/14	9:30	7.4	190	<1	<1	190	11.9	53.2	24.0	106	570	72.9	21.2	40	1.8	0.15	*

*See external laboratory documentation
pH analyzed outside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals **(bolded)** were filtered.
QA/QC available upon request.

Approved By: Scott McFridland
ELAP Certification #1595

Appendix A:

Part 1: November 28, 2014 Response to Comments Memorandum from
Tully & Young to Tulare County RMA
Part 2: Comment Letters marked to correspond to responses in memorandum

Part 1: November 28, 2014 Response to Comments Memorandum from Tully & Young to Tulare County RMA

Tully & Young
Comprehensive Water Planning

Tully & Young, Inc.
3600 American River Drive, Suite 260
Sacramento, CA 95864

MEMORANDUM

To: Mike Spata, Director
Tulare County Resource Management Agency

From: Greg Young, P.E.

Date: November 28, 2014

Subject: Response to Public Comments submitted regarding the August 25, 2014 Peer Review of *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*

The purpose of this memorandum is to document responses to the public comments received by Tulare County Resource Management Agency ("RMA") to the August 25, 2014 Peer Review Report of *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry* and Addendum (collectively the "Peer Review Memo").

Background

RMA released the Peer Review Memo on August 26, 2014 for 30-day public review. RMA received comments from several interested parties. Tully & Young was asked to review the comments and, where appropriate, prepare a response. Public comments were received from the following:

1. Mr. Patrick Mitchell, Mitchell Chadwick (September 30, 2014) – on behalf of CEMEX Construction Materials Pacific, LLC ("CEMEX").

2. Dr. Andrew Kopania, EMKO Environmental, Inc. (September 30, 2014) – author of the *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*, prepared by EMKO dated February 26, 2014 ("Report"). This comment included both a letter and a redline version of the Peer Review Memo.

3. Mr. Kenneth Schmidt, Kenneth Schmidt and Associates (September 29, 2014) – on behalf of Rob Morton, Elias Rodriquez, Orville Cloud, George Clausen, Frank Callahan, Martin Rodriquez, and Tom Cairns.

4. Ms. Patricia Stever Blattler, Executive Director of the Tulare County Farm Bureau (September 29, 2014).

5. Mr. Rob Morton (September 29, 2014).

6. Mr. John Kirkpatrick (September 30, 2014).

7. Ms. Julie Bigham (September 29, 2014).

Organization of Response to Comments

After reviewing the public comments, Tully & Young was directed to prepare responses for the first three listed commenters, since these directly addressed the Peer Review Memo. The other comment letters do not specifically address the Peer Review Memo, and as such any appropriate response will be prepared by the RMA.

Responses for the first three comment letters are provided below. Each document is also attached to this memorandum to identify the hand-marked notation in the left-hand column that provides a reference mark corresponding to the comment-response in this memorandum (e.g. the first comment on the Peer Review Memo from Mr. Mitchell is marked "Mitchell 1" and the next "Mitchell 2," etc.).

Comment Letter #1 from Mr. Patrick Mitchell

The comment letter with associated response reference marks is included as **Attachment A**.

Mitchell 1: As identified in the Peer Review Memo ("Key Findings" – p. 3, "Report Section 4" – p. 11, "Conclusion" – p. 14, and "Assessment" – p. 15), the severity of the drought was recognized. Furthermore, the peer review was of the *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*, prepared by EMKO dated February 26, 2014 ("Report"). The Report had already stated the circumstances relating to the current drought conditions – see Report at p. 6, p. 7, and p. 8. The Peer Review Memo was not intended as a documentation of the current severe drought conditions.

Mitchell 2: As clearly indicated in Addendum to the Peer Review Memo, a cursory analysis of the August 22, 2014 data was provided as part of the review of the Report. The water quality information included in the August 25, 2014 correspondence was initially determined to not be of value for the peer review. As noted in the Addendum to the Peer Review Memo, both of these CEMEX submittals will be assessed in more detail. Furthermore, as documented in the adopted Conditions of Approval ("Conditions"), Condition 48 clearly states: "*the applicant shall make available to the RMA on a monthly basis, data concerning…*" Though CEMEX is indicating through this comment that it is RMA's responsibility to have asked for the required reporting data monthly, this condition can easily also be understood as to mean the County does not need to ask. Rather, it could be read as CEMEX shall provide the information regardless of specific, routine RMA requests. Finally, as apparent through the routine testing of well levels and associated water quality analysis and reports prepared by Dellavalle, CEMEX was aware of data collection and reporting requirements. CEMEX has routinely provided the County with periodic reporting of Dellavalle monthly groundwater level data without prompting. All of these requirements are clearly detailed in the Conditions and the associated Groundwater Monitoring Plan, referenced by Condition 46, 47, and 48.

Mitchell 3: The vast majority of the assessment of the Report compared information to the *Hydrogeologic Data Evaluation Report, Stillwell Pasture*, prepared by EMKO Environmental, Inc., June 10, 2002 ("2002 Data Report") and included as a technical appendix to the Draft EIR. As identified in the comment, the contour map included in the Peer Review from the Draft EIR appears to have been updated as referenced in the 2002 Data Report (as Figure C-1). However, these two representations of groundwater flow do not "substantially" differ, as stated in the comment. On the eastern edge of the Quarry site, contours in both figures demonstrate groundwater flowing primarily from east to west (see the "483.5" contour line in Figure C-1 as compared to the right-most contours in Figure 4.4-2 of the Draft EIR). Furthermore, the inclusion of the Draft EIR figure in the Peer Review Memo was to further support the counter argument to the Report's statements that water from the Kaweah River does recharge the aquifer. Though this may occur during high flow conditions as noted on page 6 of the Report, both the figure in the Draft EIR (as included in the Peer Review Memo) and Figure C-1 in the 2002 Data Report indicate the Kaweah River does not recharge the groundwater underlying the adjacent property owner wells. Both figures demonstrate this same condition.

Mitchell 4: The Peer Review Memo correctly identifies that several of the Conditions are not satisfied, including such requirements as identified in the Groundwater Monitoring Plan referenced in Condition 46, 47 and 48. Furthermore, CEMEX clearly admits it is not in compliance with Condition 55 that states the "V" ditch "shall contain a sufficient amount of water in order to establish a groundwater mound (groundwater barrier) to maintain water levels in neighboring wells." CEMEX readily admits that it has not placed water into the "V" ditch since early September 2013. This is a finding based upon fact, not a legal conclusion.

Also, as clearly indicated in the 2002 Data Report (p. 20) "the primary potential impact on nearby shallow private wells in the possible reduction in the groundwater table during dewatering of an adjacent active pit. To *mitigate* this potential impact, a shallow trench will be installed...[w]ater pumped to this trench will maintain the groundwater table of the private wells..." (emphasis added). The Peer Review Memo relied on this information as illustrative of the fact that the quarry project would include a recharge trench to mitigate potential impacts.

Mitchell 5: The RMA contracted with Tully & Young on July 18, 2014 to expeditiously conduct the peer review of the Report. New information provide by CEMEX, such as well levels recorded by the newly installed data loggers, will be evaluated and considered. On September 17, 2014 CEMEX did provide hourly groundwater level data for three private wells as recorded by the new data loggers. This data reflected groundwater elevations from August 28 through noon on September 16, 2014. No additional well level data beyond September 16 has been provided to RMA. No data was provided for this same time period for the four on-site monitoring wells that were also apparently equipped with new data loggers.

Comment Letter #2 from Dr. Andrew Kopania

This comment letter transmitted a redlined version of the Peer Review Memo with substantial comments inserted throughout the document. The transmittal letter and redlined copy of the Peer Review Memo are included as **Attachment B**.

Kopania 1: Condition 49 states: "*Upon receipt of a written compliant from any owner of a pre-existing well which details and alleged impact to the well's water level, yield, or water quality, the RMA shall request a report form a licensed hydrogeologist explaining the problem.*" Dr. Kopania, author of the Report, is a licensed hydrogeologist. However, this Condition does not have similar mandates to professional licensing for purposes of a RMA instigated peer review of the prepared Report. Mr. Greg Young of Tully & Young, Inc. is a licensed civil engineer and well qualified to perform a peer review of the Report.

Kopania 2: The transmittal letter for the redline comments to the Peer Review Memo indicates several sources of additional information that were not considered when undertaking the peer review. When considering that a peer review is "an in-depth critique of assumptions, calculations, extrapolations, methodology, and of conclusions drawn in the original work, the peer review of the Report used many but likely not all available information to inform its findings. New information provided by CEMEX or produced and/or discovered through other investigations will continue to be assessed and conclusions of the Peer Review Memo refined as appropriate. However, based upon the cursory review of the August 22 and August 25 information as documented in the Addendum to the Peer Review Memo, it is not likely that additional data will significantly alter the current conclusions.

Kopania 3: Condition 48 clearly states CEMEX "*shall make available to the RMA on a monthly basis, data concerning (1) the locations and amounts of mine dewatering, (2) the locations and amounts of water delivered to the recharge trench, and (3) the locations and amounts of dewater delivered elsewhere.*" Given this Condition's requirements, the August 12 Technical Memorandum and associated data were viewed as part of the representation of data to be used in the peer review. The information was not considered to just be a summary of information to respond to a July 24 RMA information request and was viewed as part of the record CEMEX was providing to support the conclusions of its Report.

Kopania 4: The peer review considered a full array of information and even delayed its availability to include assessing data provided to RMA on August 12, 2014. The Addendum to the Peer Review Memo provided a cursory review of information provided by CEMEX on August 22 and August 25.

Kopania 5: The information submitted on August 25, 2014 provided "*a memorandum discussing the water quality data from the CEMEX Stillwell mine, a summary of the procedures used to purge and sample the wells, and photographs of each well head.*" However, the Groundwater Monitoring Plan requires a quarterly report detailing, among other things, groundwater contours, calculated hydraulic gradients from each monitoring event, tabular and graphical representation of monitoring data, locations and amounts of mine dewatering, and water quality data. The August 25 submittal simply provided annual water quality results and does not constitute Groundwater Monitoring Plan as required by the Conditions.

Kopania 6: The electrical records provided in the August 12, 2014 submittal show monthly usage values from July 2003 through May 2014. Upon inspection of a few of the monthly records, coupled with satellite imagery from related dates, it is still not conclusive that these records represent only the 22 Kw dewatering pump. For instance, Google Earth imagery dated 12/31/2004 (see Figure 1 below) shows little or even no disturbance to the quarry site associated with mining activities, and thus no apparent dewatering and pumping to the "V" ditch. However, the monthly power records for the period of May 2004 through November 2004 range from 1,132 kilowatt-hours used ("kWh") to 6,474 kWh per month. In 2006, when the mine had minor production, power records ranged from 3,626 kWh to 9,995 kWh per month. What consumed power during 2004 that may also be part of the power records for later periods? Or was the use of power in 2004 not related to dewatering, yet later was completely accounting for dewatering?

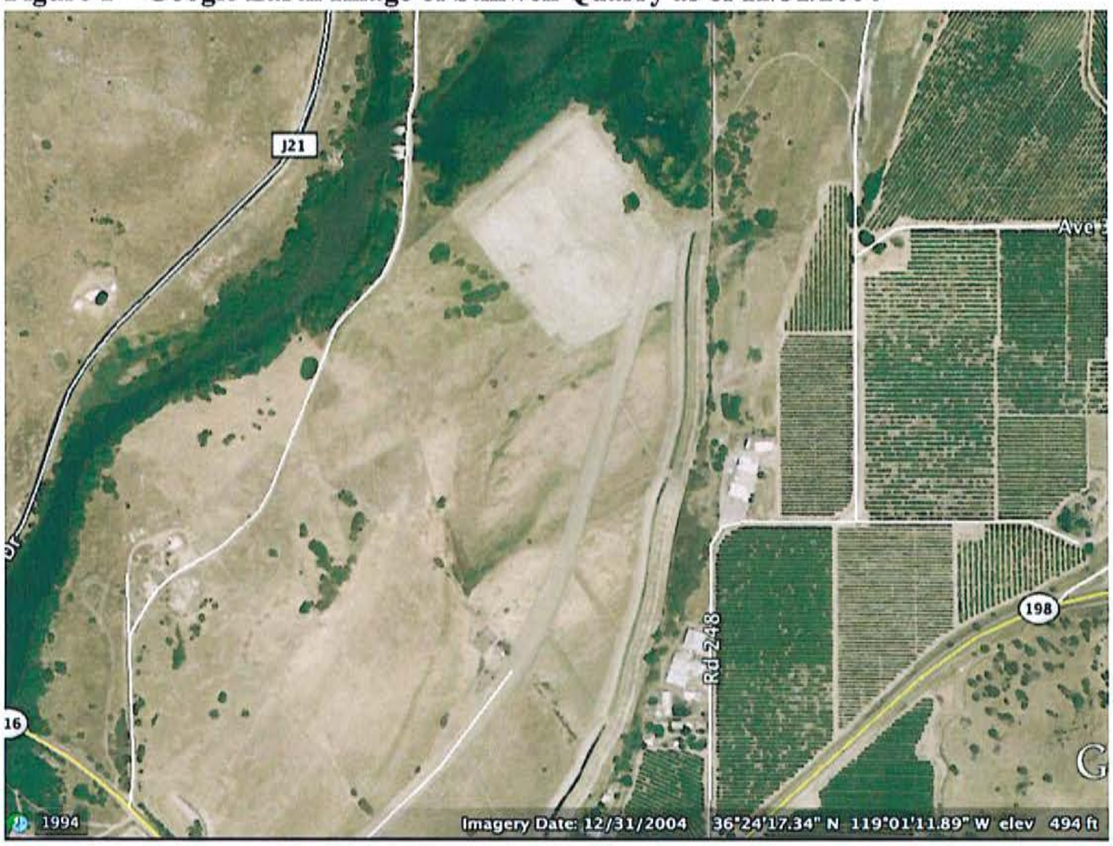
According to the 2002 Data Report (p. 14) "*The water pumped from the dewatered pit may be pumped to several different locations. While mining is occurring along the east side of the project site, some of the water will be pumped to a trench along the eastern boundary of the pasture to maintain the water level in nearby shallow private wells (see Section 5.0). This use is expected to require only a fraction of the total amount of water pumped for dewatering. The water not pumped to the trench is expected to be pumped into the northern ponds or the lakes formed by the previous project phases*." Again, simply providing power records and claiming that all the power was for dewatering AND all the dewatering was discharged to the "V" ditch is challenged by these statements.

Finally, according to the 2007 Mining Operation Annual Report submitted to the Department of Conservation (see **Attachment C**) states that the mine had zero production during 2007. Power records indicate electrical use every month, ranging from

4,638 kWh to 11,331 kWh per month. Was dewatering occurring at rates greater than 2006 while there was zero production in 2007?

The entire power record as provided by CEMEX was included as Attachment 3 to the Peer Review Memo. As detailed in the Peer Review Memo, absent further details regarding other potential power use at the site, this power data may not reflect only the power consumed by the dewatering pump.

Figure 1 – Google Earth Image of Stillwell Quarry as of 12/31/2004



Kopania 7: The Report was prepared in February 2014. The peer review was conducted on the Report and its conclusions in July and August of 2014. Additional data used during the peer review, including supporting data and analysis provided by CEMEX in August 2014, was assessed and used, as deemed appropriate, during the in-depth critique of assumptions, calculations, extrapolations, methodology, and of conclusions drawn in the original Report. The Report itself apparently did not use the data provided in August to derive its conclusions. Thus, the Report did rely on an incomplete set of facts as stated by the Peer Review Memo.

Kopania 8: Comment noted. The Peer Review Memo used "degraded" to refer to lowered groundwater elevations in the wells of the adjacent property owners, and was not referencing water quality characteristics.

Kopania 9: Refer to the responses for Kopania 2, Kopania 4 and Kopania 7.

Kopania 10: The Report presents factual information regarding quarry operations (see Report's Section 3). As such, the August 12, 2014 Technical Memorandum, the August 22, 2014 Technical Memorandum and the August 25, 2014 Technical Memorandum provided by CEMEX were viewed as supportive factual data intended to support the Report. As noted in other redline comments to the Peer Review Memo (e.g. see responses to Kopania 2, Kopania 4, Kopania 5, Kopania 7 and Kopania 9), CEMEX appears concerned that this additional information was not used for the peer review. However, in this comment, CEMEX is suggesting that the information transmitted in August was "*not provided 'in an effort to support conclusions of the Report,' but rather in response to specific requests for information from RMA.*" (See Kopania 10). As an example of how this data was viewed as supportive to the Report, the August 25, 2014 Technical Memorandum states: "*This gradient direction is consistent with previous interpretations,...*" and "*[t]hus, there does not appear to be any correlation between discharge rates to the recharge trench, groundwater elevations, and groundwater flow directions.*" These statements indicate that the data and analysis presented are intended to support conclusions of the Report.

Kopania 11: Clarification noted and appreciated. However, the comment also states that water would be present in the "V" ditch during these circumstances due to high groundwater: "*[t]hus any notes referencing a dry ditch could not have been referring to the "V" ditch, as it would have contained several feet of groundwater at those times, even if no water was being pumped into the "V" ditch.*" Upon inspection of the original Dellavalle records included as Attachment 6 to the Peer Review Memo, the notations of "no water in ditch" etcetera generally correspond to winter months such as November, December, January, February and March in 2008, 2009 and 2010.

According to the power usage records during these same periods, usage was at least 6,829 kWh (March 2009) and generally over 10,000 kWh per month, with a high of 13,112 kWh (November 2009). If the "V" ditch already "*contained several feet of groundwater,*" why would power records during these months show usage at levels equal to or even higher than many summer month power usage rates? As stated in comment Kopania 6, Mr. Kopania states: "*The Technical Memorandum states that the volumes of water in Table 1 were pumped to the V-ditch and only the V-ditch*" (see comment in footnote). According to this comment, the power records are only related to pumping to the "V" ditch. As discussed in the response to Kopania 6, there are still many uncertainties presented by the data and the statements and conclusions by the commenter.

Kopania 12: Comment noted. See responses to Kopania 6 and Kopania 11.

Kopania 13: Comment noted. See responses to Kopania 6 and Kopania 11.

Kopania 14: As clearly required by Condition 55, sufficient water should be pumped to the "V" ditch to "establish a groundwater mound (groundwater barrier) to maintain water levels in neighboring wells." Furthermore, the Report nor the Technical Memorandum attempted to assess dewatering operations, quantities discharged to the "V" ditch and groundwater levels in monitoring wells and neighboring wells. As articulated in the Peer Review Memo, the Report's conclusion that mining operations had no affect on neighboring wells absent performing such analysis raises significant questions about the validity of the Report's conclusions.

Kopania 15: Comment noted. See responses to Kopania 3 and Kopania 10.

Kopania 16: Comment noted. See responses to Kopania 6 and Kopania 11.

Kopania 17: Comment noted. See response to Kopania 11.

Kopania 18: Comment noted. See responses to Kopania 6 and Kopania 11.

Kopania 19: Comment noted. See response to Kopania 11.

Kopania 20: Comment noted. This section of the Peer Review Memo simply was noting potential other considerations that were not clearly addressed or dismissed in the Report.

Kopania 21: Comment noted. This section of the Peer Review Memo simply was noting potential other considerations that were not clearly addressed or dismissed in the Report. However, it should be noted that the Stillwell Project Draft EIR, State Clearinghouse #99071123 ("Draft EIR") states: "*Shallow groundwater in the vicinity of the Stillwell property flows generally from the area of the south dike of Kaweah Reservoir, beneath nearby orange orchards and houses, and beneath the Stillwell pasture toward the Kaweah River.*" (see Section 4.4.2 Setting, Groundwater Supplies). Further, the discussion with Impact 4.4-1 in the Draft EIR repeats this assertion, stating: "*Data from the three permanent monitoring wells indicated that shallow groundwater beneath the Stillwell property flows generally from the area of the south dike of the Kaweah Reservoir toward the Kaweah River.*"

Kopania 22: The 2002 Data Report states within its conclusions (p. 20): "*The primary potential impact on nearby shallow private wells in the possible reduction in the groundwater table during dewatering of an adjacent active pit. To <u>mitigate</u> this potential impact, a shallow trench will be installed...[w]ater pumped to this trench will maintain the groundwater table of the private wells...*" (emphasis added). Furthermore, as illustrated in the Quarry's Draft EIR, the project description states: "*Mining activities at* *the proposed Stillwell site will begin with the construction of temporary on-site water detention/recharge ditches (Figure 3-4, V-Ditch Schematic).*" (Section 3.5.2, Stillwell Project Draft EIR, State Clearinghouse #99071123 ("Draft EIR")). This section continues with a statement about aggregate extraction: "*Water will be pumped with a sump from the bottom of the quarry into V-ditches located on the property.*" Further, Section 4.4 of the Draft EIR states: "*A V-ditch would be placed near the eastern project boundary between the excavation activities and nearby shallow wells, as an additional protective measure to protect neighboring domestic wells from mining-related impacts.*" And, Impact 4.4-1 describes the inclusion of the "V" ditch to "*recharge the aquifer system.*" In other words, the reason that the Draft EIR states that no mitigation is required is due to the inclusion of the "V" ditch and intent to pump water into the ditch as part of the project description. Thus, it is not a mitigation as it is part of the project already.

Kopania 23: Comment noted. See responses to Kopania 6 and Kopania 11.

Kopania 24: Condition 55 is clear as to its requirements.

Kopania 25: The Report included discussions of flows in Kaweah River and rainfall in Lemon Cove. These external factors are no more or less related to mining activities than some of the other potential factors discussed in the Peer Review Memo.

Kopania 26: The 2002 Data Report states (p. 15): "*For the Stillwell project, a recharge trench was selected as the appropriate method to maintain water levels at the upgradient neighboring properties. The water pumped to the recharge trench will maintain the water-level elevation and, thus, the hydraulic gradient at the neighboring properties.*" Also see response to Kopania 22. Claiming that the Report presented a "fresh look" at conditions and factors without relying on this prior analysis, which resulted in the Conditions, further supports the Peer Review Memo's finding that the Report's conclusions reached were without merit.

Kopania 27: Absent a common datum, groundwater contours cannot be developed that allow an understanding to be developed of the relationships between hydraulic gradients, well levels, flow direction, and mine operations. This information is required as part of the Annual Groundwater Monitoring Report required by the Conditions. Specifically, the Groundwater Monitoring Plan states (p. 3): "*The mining operator shall provide the County with quarterly groundwater monitoring reports, prepared and signed by a State-certified hydrogeologist...The reports will also include groundwater contour maps showing the location of each monitoring well and the current direction of groundwater flow and hydraulic gradient calculated for each monitoring event.*"

Kopania 28: Comment noted.

Kopania 29: As noted in comment Kopania 26, the Report "*did not rely upon the previous findings of the EIR.*" However, this comment seeks to use the 2002 Data Report to help justify the Report findings. The comment quotes the first sentence on page 15, second paragraph of the 2002 Data Report. The second sentence states: "*For the Stillwell project, a recharge trench was selected as the appropriate method to maintain water levels at the upgradient neighboring properties. The water pumped to the recharge trench will maintain the water-level elevation and, thus, the hydraulic gradient at the neighboring properties.*" While the intent may be to only pump water to the "V" ditch from the quarry as it is being dewatered for mining operations, neither the 2002 Data Report nor the Conditions place any limit on the possibility of other sources to maintain water levels. Specifically, Condition 55 states that the "V" ditch "*shall contain a sufficient amount of water...*" Further, Condition 46 states: "*The purpose of the monitoring plan shall be to assess the effectiveness of the V-ditch design in maintaining groundwater levels in wells along the east and southeast boundary of the site...*" There is no specific limitation placed on the source water only being from quarry pit dewatering.

Kopania 30: Comment noted. This data was assessed as part of the peer review.

Kopania 31: The power records were provided in the August Technical Memorandum. As discussed in the Peer Review Memo (p. 4), there was still unexplained conflict between statements in the Report and the data provided with the August Technical Memorandum. Based upon this set of comments, CEMEX is clarifying when dewatering began. However, as discussed in responses to Kopania 6 and Kopania 11, several questions still exist, which still maintains the same conclusions of the Peer Review Memo.

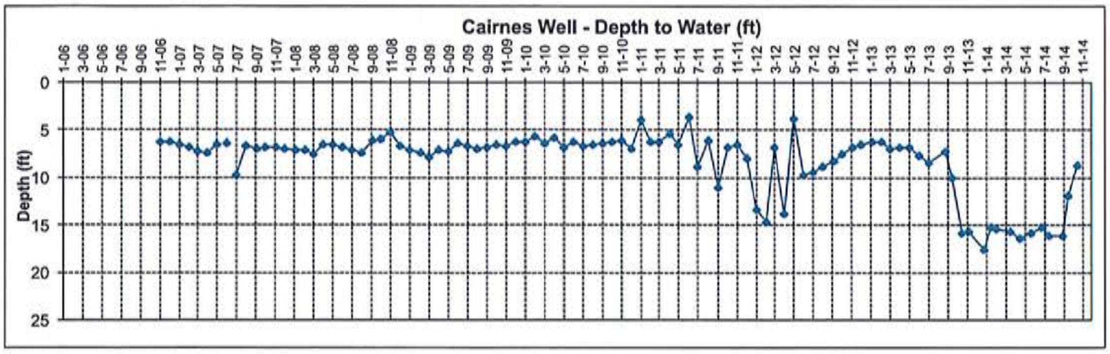
Kopania 32: Comment noted. This was a typographical error. The Peer Review should have not included the word "not" in this sentence.

Kopania 33: Comment noted. Please see previous responses.

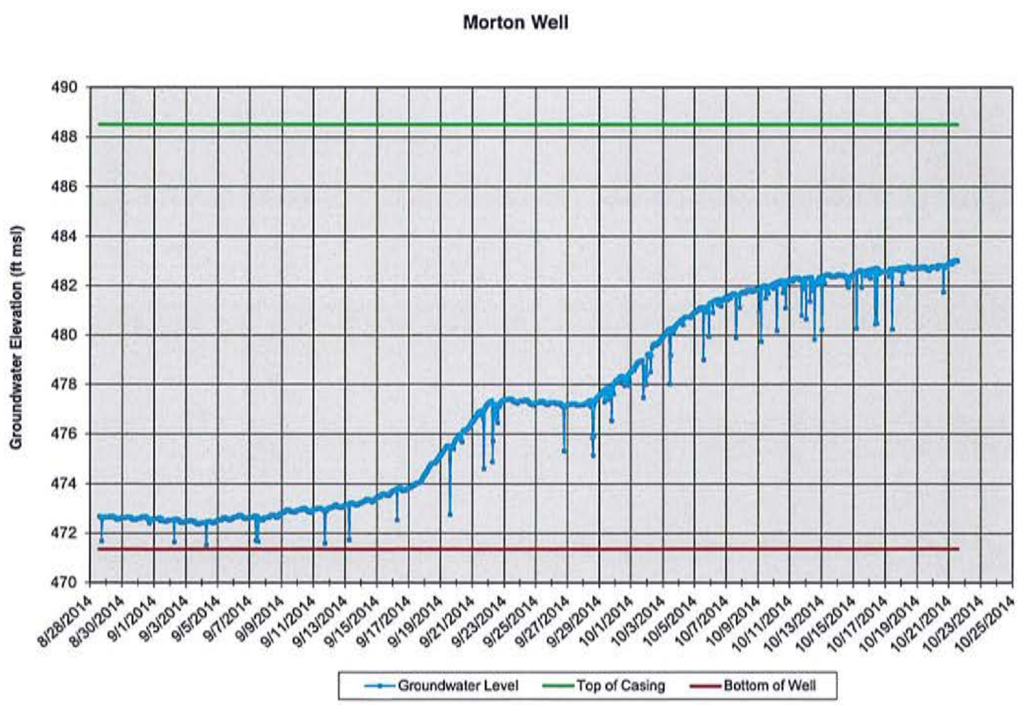
Kopania 34: Condition 55 states that the "V" ditch will be 6-8 feet in depth. According to the DellaValle data, in June 2005 the monitoring wells – which are adjacent to the "V" ditch indicated water levels were between 8 and 12 feet below ground surface. It is as likely that the water in the "V" ditch was from dewatering activities as it was native, exposed groundwater. Furthermore, as contended by other comments, the power records indicate dewatering began in 2003 and dewatering was occurring in June 2005 (note that the power records for July are a record of power usage in June).

Kopania 35: Comment noted. However, recent well level records reported by DellaValle indicate the Cairns well has experienced raised groundwater levels since CEMEX began again discharging to the "V" ditch in early September 2014. A correlation appears to exist. Below is a copy of the measured depth to water in the Cairns' well as reported by

DellaValle in a spreadsheet sent to CEMEX and RMA by Mary Callen of DellaValle on October 24, 2014.



Kopania 36: Comment noted. However, depth to water data provided by CEMEX from a datalogger installed in the Morton well appears to indicate a direct correlation between water in the "V" ditch and improved conditions in the Morton Well. Mr. Kopania provided the plot below in an October 27, 2014 email to RMA. As indicated by the plot, water levels have raised by 10 feet in the Morton well since the reintroduction of water into the "V" ditch. During this period, no significant other factors were present that could result in this improved condition (e.g. Kaweah River flows have not increased, Lake Kaweah levels have continued to decline, and no significant rain events have occurred.)



Kopania 37: Comment noted.

Kopania 38: Comment noted. However, as explained in the 2002 Data Report:

> *"Groundwater elevations at the northeast, upgradient side of the proposed quarry are approximately 484 feet above mean sea level (ft amsl). Groundwater elevations at the southwest, downgradient side of the proposed quarry are approximately 477 ft amsl. Thus, there is approximately seven feet of difference in groundwater across the proposed project area.*
>
> *Once the project is completed, the water surface in the lake will stabilize at an elevation that is at an equilibrium between the rate of groundwater inflow from upgradient and the rate of groundwater outflow downgradient. This will result in the upgradient edge of the lake being at an elevation below the adjacent groundwater table, and the downgradient edge of the lake being at an elevation slightly above the previous groundwater table. The downgradient edge of the lake, however, can not rise significantly because the hydraulic gradient in the aquifer would then increase, resulting in an increased rate of groundwater outflow. However, since the lake elevation will not affect the rate of groundwater movement at some distance upgradient of the quarry, the rate of groundwater inflow will not increase. Thus, the lake will reach an equilibrium point at an elevation that maintains the rate of groundwater outflow at about the rate of pre-project groundwater movement. This rate occurs when the lake elevation is at about the same elevation as the current groundwater elevation at the downgradient edge of the project area.*
>
> *To reduce the overall drop in water surface elevation across the lake, a north-south trending berm will be placed across the eastern third of the lake, as shown on Figure C-1. The east part of the lake will then have a surface elevation of approximately 483.5 ft amsl. The west part of the lake will then have a surface elevation ofo between 477 ft amsl and 480 ft amsl, which is approximately the same as the current groundwater elevation."* (2002 Data Report, p. 16).

The important fact to take away is the recognition that the lake will cause a new gradient as it seeks its equilibrium. Thus, the lake would be divided into two sections to allow the water levels nearest the affected upgradient wells to reach an equilibrium close to the pre-project condition (483.5 ft amsl compared to 484 ft amsl).

Kopania 39: Comment noted. See various prior related responses.

Kopania 40: See response to Kopania 38.

Kopania 41: As stated in the 2002 Data Report:

> "*The effectiveness of using a trench to maintain water levels in the shallow wells east of the project boundary was evaluated as part of the aquifer pumping tests conducted at the site by Sierra-Pacific (2000)...During the second test, drawdown was not observed at T-6 due to the recharge occurring at the trench, as shown on Figure 5.*
>
> *Based on the data shown on Figure 5, use of the shallow trench will prevent a drop in the water levels within the private wells that might otherwise be caused during the gravel mining operations. For the Stillwell project, a recharge trench was selected as the appropriate method to maintain water levels at the upgradient neighboring properties.*" (2002 Data Report, p. 15).

The scientific evidence from the 2002 Data Report appears to have been used as the basis for the Conditions.

Kopania 42: See prior responses.

Kopania 43: Section 3 of the Report states: "*Thus, the low water levels reported in the complaints discussed in Section 2.0 are not a recent incident and have been occurring cyclically since at least August 2011. The data clearly demonstrate that the groundwater level in the area was already dropping rapidly prior to the shutdown on September 4, 2013 of the pumps used for dewatering and for providing water to the recharge trench.*" (Report, p. 5). This paragraph was determined to be providing conclusive statements by the Peer Review Memo.

Kopania 44: Comment noted.

Kopania 45: See response to Kopania 43.

Kopania 46: Comment noted. The section's intent to have the reader focus on only the last few years, however, intends to support conclusions about the role of the River that are included in Section 6. The Peer Review Memo is broadening the comparison by indicating that the fall/winter of 2006/07 was comparable to the dates the Report focuses on. Thus, the Peer Review Memo regarded these representations as "implying" a conclusion. The implied conclusion was stated in Section 6 of the Report.

Kopania 47: See response to Kopania 46.

Kopania 48: See response to Kopania 46.

Kopania 49: See prior responses. Through these responses and accompanying assessment of data provided by CEMEX in the month of October 2014, the August 25, 2014 Peer Review Memo will remain as is, with any additional analysis and conclusions presented in the overarching cover letter to RMA to be provided in early November 2014.

Kopania 50: Comment noted. The Report failed to provide conclusive representation that the River typically is the source of water to the upgradient wells (from the portion of the River north of the quarry) since there were no groundwater contour maps or historic hydraulic gradient determinations routinely prepared and provided to the RMA.

Kopania 51: Comment noted.

Kopania 52: Comment noted.

Kopania 53: Comment noted.

Kopania 54: The replacement figure identified does not demonstrate "substantial differences" in the representations of the direction of groundwater flow in the area of the subject adjacent private wells. Thus, either figure would result in the same statement in the Peer Review Memo indicating that flow from the River was not readily apparent or demonstrated in the 2002 Data Report or the Report.

Kopania 55: The 2002 Data Report stated: "*At the northern edge of the Stillwell pature, the groundwater table, water level withinthe northern ponds, and the water level in the river (when flowing) are all approximately 483 ft amsl…*" (2002 Data Report, p. 13). As shown in the Morton Well water level graphic presented with response to Kopania 36, water levels in the Morton well are currently about 483 ft amsl. According to historic records of depth-to-water in the Morton well, as recorded by DellaValle on a monthly basis, the Morton well has routinely been above 483 ft amsl. As the Morton well is located along the southern half of the eastern boundary, and groundwater flow conditions (e.g. as represented in the "corrected Figure 4.4-2 (see Kopania 54)), the river and northern pond elevations would need to be higher than 483 ft amsl, especially when the River is flowing. Otherwise, it is difficult to conclude the River is a contributing source to a well such at the Morton well.

Kopania 56: This statement in the Peer Review Memo was intended to indicate that some flows from the River that may occur along the western edge of the project would act as a "mound" and thus defining the hydraulic gradient across the pre-project site and extending upgradient underneath the subject properties. This would be similar to the artificial mounding effect created by the "V" ditch. But, absent any excavation on the project site, the replacement mounding affect to maintain the hydraulic gradient provided by the "V" ditch would be necessary as the River boundary would be creating the same affect naturally.

Kopania 57: Comment noted. See prior responses, especially response to Kopania 22.

Kopania 58: As evidenced by the comment in Kopania 20 and Kopania 38, the quarry operates in a shallow alluvial aquifer over bedrock that is independent from deep aquifers in the area and within the broader Kaweah and Kings subbasins. As such, the local parties had not experienced any issues of concern, especially not dating back to 2008, as referenced by the Governor's declaration.

Kopania 59: As evidenced by the water level data recently provided by CEMEX (e.g. see the plot associated with response to Kopania 36), the return of water to the "V" ditch appears to have a direct and fairly immediate affect on water levels in the adjacent wells. As concluded by the Peer Review Memo, although the drought has an effect on local circumstances, it is difficult to say CEMEX is without fault.

Kopania 60: Comment noted.

Kopania 61: As stated in the Report: "*The data from the groundwater monitoring program shows that declining water levels in the wells occurred from August 2011 to May 2012, and again from January 2013 to the present.*" (Report, p. 8). Water levels increased after the low values in May of 2012 to near normal levels. According to the DellaValle reported water level data, levels drastically decreased around September 2013 in at least the Cairns and Morton wells, and did not recover as they had following the low values in May 2012. Pumping to the "V" ditch stopped in September 2013. The Report's effort to correlate the reported low water levels as a trend starting back in early 2012 is not supported by the evidence.

Kopania 62: The Conditions required the "V" ditch to address affects of the quarry, whether mining activities were on-going or not. Furthermore, as noted in response to Kopania 61, low water levels in 2012 rebounded by as much as 7 or 8 feet by September 2012, likely due in significant part to water discharged into the "V" ditch.

Kopania 63: Although it is generally accepted that the primary source of water for the "V" ditch would be water pumped from the mine pit, the 2002 Data Report contemplated other sources, primarily from a water quality standpoint, stating: "*If the water pumped from the currently-active pit contains elevated constituent levels..., then water from an alternate source will be pumped to the trench. Alternate sources inlcue the 50-acre northern ponds and previous gravel pits within the project site.*" (2002 Data Report, p. 17).

When the above is considered in conjunction with Condition 49's statement that "*If a significant problem...be caused by mining activities, then immediate action must be taken to correct the condition, which may include (but is not limited to) modifying the recharge ditches to provide more recharge capacity, reducing the amount of pit dewatering, or if* *necessary, ceasing mining operations*," the parenthetical of "not limited to" can be interpreted as potentially requiring alternative sources of water to be "pumped to the trench."

Kopania 64: See response to Kopania 63.

Kopania 65: The comparison of groundwater level declines seen in spring of 2012, which subsequently recovered by summer of 2012, to conditions in 2013 and 2014 when no quarry dewatering occurred (e.g. no water being discharged to the "V" ditch), is not valid. The Conditions requiring the "V" ditch and sufficient water therein are to address the presence of the quarry, regardless of whether dewatering is occurring. As addressed elsewhere in these responses and in the Peer Review Memo, the Conditions were also to protect the upgradient wells following excavation, when no dewatering occurs and the pits are instead lakes.

Kopania 66: As evidenced by RMA's response to the CEMEX Interim Management Plan (IMP) (see **Attachment D**), the IMP has been rejected for numerous reasons.

Kopania 67: See response to Kopania 66.

Kopania 68: The conclusions of the Peer Review Memo, as articulated throughout the above responses to Mr. Kopania's direct comments, do not merit any adjustment. Furthermore, as evidenced by the recent datalogger information used to plot depth to water in several adjacent wells and the on-site monitoring wells (e.g. see the plot with response to Kopania 36), re-introduction of water into the "V" ditch appears to have had an immediate and positive affect on groundwater levels. This demonstrates that the primary conclusion of the Peer Review Memo – that the Report cannot reach a determinant conclusion that CEMEX has no fault – still stands as a valid conclusion.

Kopania 69: The purpose of the Report was to evaluate whether the alleged impacts to the adjacent wells was "caused by mining activities," (Condition 49), and if so then for immediate corrective actions to be taken. The arguments given in the letters all include statements alleging that the discontinued delivery of water to the "V" ditch was a likely cause of dramatically lowered groundwater conditions. Thus, the Report's objective was to explain the problem and determine whether the alleged stoppage of delivery to the "V" ditch was a cause. The Report states, "*The available data and documentation demonstrate that the concerns identified in the letters received in late January 2014 are not caused by mining activities*." (Report, p. 8). For purposes of the Peer Review Memo, this statement appeared to be a conclusion that the mining operations were not at fault.

Comment Letter #3 from Dr. Ken Schmidt

This comment letter is included as **Attachment E** to this memorandum.

Schmidt 1: Comment noted. The identified sentence obviously is not the primary conclusion of the Peer Review Memo.

Schmidt 2: Comment noted. The Peer Review Memo attempted to evaluate the Report and associated materials submitted in mid- and late August. However, some of the information was not exhaustively evaluated as such would not affect the primary conclusion of the Peer Review Memo. Further investigations into the representation of groundwater flow likely would have identified further concerns with the Report's conclusions, as identified by this comment.

Schmidt 3: Comment noted.

Schmidt 4: Comment noted. The affect of "lake leveling" was roughly captured by the Peer Review Memo in discussion of the change to hydraulic gradient that would occur underlying the subject properties as a result of creation of the pit and subsequent lake. As noted by the Peer Review Memo, the intent of the "V" ditch was to establish a mound upgradient of the quarry to essentially compensate for the change to the gradient resulting from dewatering or lake leveling.

Schmidt 5: Comment noted.

Schmidt 6: Comment noted.

Attachment A

MITCHELL CHADWICK

Patrick G. Mitchell
pmitchell@mitchellchadwick.com
916-462-8887
916-788-0290 Fax

September 30, 2014

VIA E-MAIL

Michael Spata
Associate Director
Tulare County Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA 93277

Re: Comments on Tully & Young Peer Review of EMKO Environmental Report

Dear Michael:

As you know, I represent Cemex Construction Materials Pacific, LLC ("Cemex"), operator of the Stillwell Mine Project ("Mine") located in Tulare County ("County"). This letter responds to your August 29, 2014 request for comments on Tully &Young Inc.'s Peer Review of a report titled "Hydrologic Evaluation of Current Groundwater Conditions at the Cemex Stillwell Quarry" ("EMKO Report"). The EMKO Report was prepared and submitted to the County by Cemex's consultant EMKO Environmental, Inc. ("EMKO") on February 26, 2014 in response to complaints from Mine neighbors in late January, 2014 regarding decreased water levels in their shallow wells, per Mine Permit Condition of Approval No. 49.

The EMKO Report finds that the extreme drought in California, rather than mining activities conducted by Cemex, is responsible for the lower water levels experienced by Mine neighbors with shallow wells. The Peer Review concludes that "[b]ased upon the lack of historic data and reports to provide both context and a complete technical set of facts, the conclusions reached by the EMKO Report's cause-and-affect [sic.] analysis of this incomplete set of facts appear without merit in many instances." Although the Peer Review acknowledges that *"the drought is undoubtedly a primary contributing factor,"* it concludes that "the actions of CEMEX could have caused or at least exacerbated the degraded local groundwater conditions." Additionally, it concludes that "[a]s such, it is not possible to *fully place blame on the current drought conditions or other external factors* to explain the current groundwater level conditions being experienced by the subject properties."

As noted in the Peer Review, the current drought, which Tully & Young acknowledges is a primary factor responsible for the neighbors' decreased well water levels, is the worst in California in decades. Contrary to the Peer Review's statement that the drought's severity was "not yet fully apparent," at the time of the neighbors' complaints, Governor Brown issued an

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Emergency Drought Proclamation on January 17, 2014. The drought is recognized as a three-year drought, and was categorized as "extreme" in Tulare County by the U.S. Drought Monitor long before the start of the 2014 calendar year.[1] Furthermore, on April 30, 2014 the State Department of Water Resources ("DWR") released a Public Update for Drought Response report that states: "[s]ince spring 2008, groundwater levels have experienced all-time historical lows...in the southern San Joaquin Valley"; "In many areas of the San Joaquin Valley, recent groundwater levels are more than 100 feet below previous historical lows"; and "The Kaweah and Kings subbasins have the greatest numbers of deepened wells in an alluvial groundwater basin." The Peer Review should be revised to acknowledge the known severity of the drought both at the time of and prior to the neighbors' complaints.

Mitchell 2

The Peer Review also concludes that Cemex cannot be excused from fault due to "an incomplete set of facts and obvious violations of the Conditions of Approval." The missing data that comprises this so-called "incomplete set of facts" has in fact been provided to the County, but was not considered by Tully & Young in the Peer Review. Mine Permit Condition of Approval 48 requires that certain data be "made available" to the County during Mine operations. The County had not requested this data from Cemex during Mine operations, but did recently request that it be presented to the County after additional questions regarding the neighbors' well problems were raised. Cemex representatives, EMKO and County staff discussed a timeframe under which additional materials could be compiled and provided to the County. Unfortunately, the Peer Review did not consider this additional material which was provided to the County by EMKO per the agreed-upon schedule, on August 22 and 25, 2014.

Mitchell 3

Additionally, the Peer Review relies what appears to be an administrative draft version of the Revised Draft Environmental Impact Report ("EIR") for the Mine, which was never published and shows incorrect groundwater contours, to conclude that the EMKO Report's analysis of groundwater flows is faulty. The correct and final version of this figure from the 2002 Revised DEIR, which shows substantially different groundwater contours, appears in Attachment 7 to the Peer Review. The Peer Review should be revised to include a full analysis of the additional data provided to the County by EMKO and should rely only on final versions of the Mine Project EIR.

Mitchell 4

Tully & Young inappropriately reaches legal conclusions regarding the status of Cemex's compliance with its Mine Permit and relies on these conclusions to determine that Cemex "cannot be excused from fault," due to "violations of the Conditions of Approval." In several instances, the Peer Review assumes that the Conditions of Approval which require monitoring and data collection must have been imposed by the County in order to mitigate for impacts that were expected to result from mining. In fact, the EIR for the Mine (which Tully & Young purports to rely upon in the Peer Review) concludes that the Mine would have a *less than significant impact* on nearby shallow wells, and that therefore no mitigation was required. (See Revised Draft EIR Section 4.4.) These Conditions of Approval were included only as a response to concerns from Mine neighbors which had not been substantiated with evidence. In the interest

[1] See http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?CA (last accessed Sept. 29, 2014)

of being a good neighbor, Cemex agreed to accept these Permit Conditions despite substantial evidence in the EIR and record that the impacts to wells would be less than significant. Such agreement does not establish that the Mine would have an impact on neighboring wells if the Conditions were not complied with and therefore these statements and conclusions drawn from them should be removed from the Peer Review.

Mitchell5

Finally, as noted in your August 29, 2014 letter, Cemex offered to and subsequently did install dataloggers in many of the neighbors' wells as well as Cemex's monitoring wells located along the V-Ditch. On September 2, 2014, Cemex began dewatering the mine excavation and pumping the water to the V-Ditch and is currently gathering data to further establish a record regarding the impact of the V-Ditch on the neighbors' wells, if any. This information, which will continue to be provided to the County as it is collected, was also not considered by Tully & Young because the Peer Review was prematurely published before the data was obtained.

We request that the Peer Review be revised to consider the additional information recently provided to the County by EMKO, and to correct the deficiencies noted above. Thank you for your consideration of this request.

Best regards,

MITCHELL CHADWICK LLP

Patrick G. Mitchell

PGM:de

cc: Kathleen Bales-Lange, Tulare County Counsel

Aaron Bock, Tulare County RMA

Ron Wilson, Cemex

Pete Locastro, Cemex

Andy Kopania, EMKO Environmental

Allison Reynolds, Mitchell Chadwick

Part 2: Comment Letters marked to correspond to responses in memorandum

Tully & Young
Comprehensive Water Planning

Tully & Young, Inc.
3600 American River Drive, Suite 260
Sacramento, CA 95864

MEMORANDUM

To:	**Mike Spata, Associate Director Tulare County Resource Management Agency**
From:	**Greg Young, P.E.**
Date:	**August 25, 2014**
Subject:	**Findings and conclusions of peer review of *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*, prepared by EMKO dated February 26, 2014**

The purposes of this memorandum are to (1) evaluate the findings from the peer review of the *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*, prepared by EMKO dated February 26, 2014 ("Report"), and (2) present conclusions of the peer review. A copy of the Report is included as **Attachment 1**.

Background

Kopania 1

Tully & Young, Inc., an experienced water resource planning firm in Sacramento, was contracted by the Tulare County Resource Management Agency ("County") to perform a peer review of Report in response to on-going concerns regarding localized groundwater elevation conditions. Company qualifications and Greg Young's resume are included as **Attachment 2**. <u>Note that COA 49 specifically requires the use of a licensed hydrogeologist.</u>

The Report was originally prepared at the request of the County "*to address several written complaints received by RMA in late January 2014 regarding groundwater conditions adjacent to the CEMEX Construction Materials, Inc. (CEMEX) Stillwell Quarry…*" (Report, p. 3). At that time, residents of properties adjacent to the Stillwell Quarry ("Quarry") were experiencing lowering of the groundwater in shallow domestic wells and believed the Quarry was responsible. The Report concluded that "[T]*he available data and documentation demonstrate that the concerns identified in the letters received in late January 2014 are not caused by mining activities.*"

Because groundwater conditions have continued to be of concern on adjacent properties, the Report's conclusion has been questioned and challenged by the same local residents, and has been brought to attention of the County Board of Supervisors (see transcript from July 8, 2014 Board of Supervisors meeting). The County has requested Tully & Young review the Report in light of these challenges as it continues to work to resolve the circumstances being experienced by the local residents.

Kopania 2

The review's focus was not limited to the materials and conclusions of the Report. To understand the underlying context as well as data and analysis in the Report, independent research of other data, reports, and materials relevant to the Quarry was undertaken, and discussions were had with County. This independent research and review of other materials, as well as communications with the County, helped place the Report's information and conclusions in context to enable an appropriate peer review. For instance, as discussed later in this memorandum, this review included the original EIR and supporting technical documents, relevant hydrologic and reservoir data, and historic satellite images. However, T&Y fails to consider the complete file and records, as noted in the transmittal letter for these redline comments.

Kopania 3

In addition to the aforementioned review and research, the lead author of the Report, Dr. Andrew Kopania, was engaged by CEMEX to prepare additional materials as an addendum to the Report ("August Addendum"). These materials were summarized and provided to the County in a memorandum (see **Attachment 3**) and accompanying data in an email to the County dated August 12, 2014 (also included with **Attachment 3**). Though this memorandum and data was provided after a thorough review of the Report was already completed, it is relevant to the peer review effort and therefore incorporated and referenced herein as appropriate~~.~~ This paragraph misstates the purpose of the Technical Memorandum and incorrectly presumes that the materials were prepared as an Addendum to the February 2014 EMKO Report. As stated in the first paragraph of the Technical Memorandum, "This information has been summarized from available records based on the information request in the July 24, 2014 electronic mail message from Aaron Bock and our meeting and teleconference on August 4, 2014."

Governing Permit Conditions

As a starting point, the Conditions of Approval ("Conditions") for the Quarry, as adopted in 2002 by the County Board of Supervisors, were reviewed to understand the requirements placed upon the operator of the Quarry, CEMEX Construction Materials, Inc. ("CEMEX"). Conditions 46 through 55 were identified as having a primary relationship to the conditions of groundwater in neighboring wells (see **Attachment 4**)

Kopania 4

Kopania 5

During review of the Report and associated research it became apparent that many monitoring reports and associated analyses, as required by the Conditions, were never prepared or provided to the County. Given the incomplete set of information considered byT&Y in its Peer Review, this paragraph should be revised to reflect the information provided to the County by EMKO. For instance, Condition 48 clearly states that an annual groundwater monitoring report shall be prepared, as required by the Groundwater Monitoring Plan ("Monitoring Plan"). Such reports do not appear to exist. Annual reports containing water quality analyses were submitted to the County on August 25, 2014. As a further example, the Monitoring Plan states that the Quarry operator shall provide the County with reports that "*will also include groundwater* *contour maps showing the location of each monitoring well and the current direction of groundwater flow and hydraulic gradient calculated for each monitoring event.*" (Monitoring Plan, p. 3). Lacking this information, several questions cannot yet be fully addressed and thus the key finding of the Report is limited.

The August Addendum did provide some additional data and analysis regarding the requirements of Condition 48, namely, providing estimates of historic monthly pumping to dewater the facility.[1] The discussion above and related footnote misstate and misinterpret the information provided in the Technical Memorandum. Specifically, Item #1 on page 1 of the Technical Memorandum states that the "electrical usage records are for the pump(s) used to provide water to the recharge trench…" In addition, Item #4 states that "Table 1 shows…total gallons pumped to the recharge trench…" Thus, the discussion and data provided clearly state that the water pumped using the *electric pumps* was discharged to the V-ditch. There was only a short period of time, during a very wet winter, where some water was pumped to a different location. The third full paragraph on page 2 of the Technical Memorandum states that during January-April 2011, water pumped by a *diesel-fueled pump* was sent to the North Pond. Clearly, the pumping from the diesel-fueled pump would not be reflected in the electrical usage records. There is no ambiguity about the amount of water delivered to the V-ditch.

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Organization

This memorandum is organized to first provide the key finding of the peer review, which is then supported by a more complete discussion of elements of the Report and associated research.

Key Finding of Peer Review

Based upon the lack of historic data and reports to provide both context and a complete technical set of facts, the conclusions reached by the Report's cause-and-affect analysis of this incomplete set of facts appear without merit in many instances. As noted above and in the transmittal letter for these redline comments, the Peer Review is not based upon the full set of information used to prepare the Report and therefore conclusions about the Report's reliance on an "incomplete set of facts" are not correct. As such, it is not possible to fully place blame on the current drought conditions or other external factors to explain the current groundwater level conditions being experienced by the subject properties. Although the drought is undoubtedly a primary contributing

Kopania 7

[1] As discussed in this memorandum on pages 4/5, the August Addendum claims the monthly power records from August 2003 through June 2014, translated to volumes of water, represent deliveries to the "V" ditch. However, as noted in Condition 48, the regular reporting should provide "*data concerning (1) the locations and amounts of mine dewatering, (2) the locations and amounts of water delivered to the recharge ditch, and (3) the locations and amounts of water delivered elsewhere.*" Since there is no clear distinction in the data provided with the August Addendum, the data is recognized as only representing concern (1). This discussion clearly misrepresents the information and statements made in the Technical Memorandum. The Technical Memorandum states that the volumes of water in Table 1 were pumped to the V-ditch and only the V-ditch. Pumping to the North Pond during major rainfall events in 2011 is also discussed, and the August 12, 2014 Technical Memorandum clearly states that the volumes pumped to the North Pond are not included in the totals sent to the V-ditch shown in Table 1.

Kopania 8

factor, the actions of CEMEX could have caused or at least exacerbated the degraded local
groundwater conditions. It is unclear what is meant by "degraded local groundwater conditions". In federal, state and local law and regulations, "groundwater degradation" typically refers to water quality issues. While it is true that the groundwater at the locations of the private wells is significantly degraded by nitrate and total dissolved solids, that condition existed prior to mining as noted in the 2002 EIR studies and is not an issue addressed by the Report, nor should it be discussed in the Peer Review.

Kopania 9

Specifically, absent water in the "V" ditch since September 4, 2013, coupled with the absence of groundwater elevation contour maps and estimates of the hydraulic gradient that should have been routinely prepared, CEMEX cannot demonstrably be excused from fault. Had this information been available, the relationships between actions of CEMEX and the groundwater conditions at the subject properties could more readily be established and understood. Please refer to the transmittal letter for these redline comments. Substantial additional information is available but was not considered in the Peer Review.

Although, it should be noted, that even if water delivered to the "V" ditch, the groundwater levels under the subject properties may still have declined due to the current extreme drought conditions and other external factors. But, with an incomplete set of facts and obvious violations of Conditions of Approval, the Report cannot reach a determinant conclusion that CEMEX has no fault – even if that were the case.

Kopania 10

Detailed Report Review

As noted above, the August Addendum provided additional data and assessment of facts in an effort to support conclusions of the Report. As noted above, the Technical Memorandum was not provided "in an effort to support conclusions of the Report," but rather in response to specific requests for information from RMA. The data and assessment in the August Addendum is independently addressed first, as it affects the review of the six primary sections of the Report.

The Report includes six primary sections: (1) Introduction, (2) Nature of Complaints, (3) Mining Operations and Monitoring, (4) Rainfall Data for Lemon Cove, (5) Hydrologic Conditions for the Kaweah River, and (6) Summary and Conclusions. Each of these is independently addressed after the August Addendum.

August Addendum

This memorandum provided "*a discussion of the operations of the recharge trench at the CEMEX Stillwell Mine.*" The memorandum continues by citing electrical use records for the pump(s) used to provide water to the "V" ditch, pump size and flow rate information from the pump supplier, pump performance curves, and a table equating the monthly power records from August 2003 through June 2014 to gallons of water per month.

The August Addendum also included an email dated August 5, 2014 from CEMEX employee Pete Locastro that states "*Noted on the excel sheet are the dates and amounts we pumped into the north pond.*" (See **Attachment 5**.)

Assessment

The August Addendum was intended to resolve the previously lacking information of historic discharges to the "V" ditch. However, though the underlying power data (and subsequent translation to gallons delivered per month) does demonstrate consistent power usage since January 2006, the representation that it also represents delivery to the "V" ditch is not conclusive and conflicts with other statements and data.

Specifically, the monthly well-level data collected by Dellavalle and represented in the Report often included notes associated with the data collection event. For instance, as shown in **Attachment 6**, notes for the monitoring wells include: "Ditch running full," "Ditch ½ full," and "No water in the ditch." If, as suspected but not confirmed, the "ditch" referenced in these notes is the "V" ditch, then there are several months when the measurement was taken and no water was in the ditch. This conflicts with the power data from the August Addendum that implies water was in the ditch in these months. Because mining operations may vary daily, it is unclear if on the day groundwater levels were measured, pumping to the "V" ditch was not occurring, but was occurring other days during the same month, or whether no water was being discharged for a longer period – even for several months in a row. The Dellavalle field notes refer to the concrete-lined irrigation canal (aka the Peoples Ditch) located to the east of the V-ditch near the locations of the Quarry neighbors' wells. Dellavalle Laboratory, Inc. has provided a letter confirming this, which is attached hereto as Exhibit A. Even without the letter in Exhibit A, the fact that the Dellavalle notes could not be referring to the V-ditch should have been apparent to T&Y during the Peer Review analysis. Specifically, COA 55 (which T&Y restates in full below) states that the V-ditch was to be excavated to a depth of 6-8 feet. The water level data in the table cited by T&Y shows that the depth to groundwater was as shallow as 2-5 feet during the time when many of the "No water in ditch" notes were made. Thus, any notes referencing a dry ditch could not have been referring to the V-ditch, as it would have contained several feet of groundwater at those times, even if no water was being pumped into the V-ditch. Accordingly, the Dellavalle notes clearly do not reference the V-ditch and speculation regarding the Report's conclusions based on the Dellavalle notes is unfounded.

Kopania 11

Further, the Report, assessed in more detail in the latter sections of this memorandum, specifically states: "*The water levels have been measured monthly since May 2005, which is more than three years prior to the beginning of dewatering and use of the recharge trench.*" (Report, p. 5). This would translate to dewatering operations beginning sometime after May 2008. Yet, the August Addendum states: "*Continuous dewatering and discharge to the recharge trench occurred from January 2006 until June 17, 2013...*" (August Addendum p.1/2). The data from the August Addendum is presented in **Figure 1**. The Report misreports the start of dewatering to the V-ditch due to a miscommunication with CEMEX staff. The Technical Memorandum was provided subsequent to the February 2014 Report and contains accurate information regarding the start of dewatering.

Kopania 12

Kopania 12 cont.

The start date of dewatering activities and discharge to the "V" ditch in these two instances conflict by several years. There is no evidence provided as to which is correct. The Technical Memorandum corrects a misstatement in the Report and supersedes the statements in the Report regarding the start date of dewatering. Technical Memorandum corrects a misstatement in the Report and supersedes the statements in the Report regarding the start date of dewatering. One possible conclusion is that the power records indicate power consumed by the Quarry, but do not directly translate to discharge to the "V" ditch. This possibility is supported by the email statement indicating water was pumped to the North Pond (see **Attachment 5**). The North Pond is not connected to the "V" ditch. As discussed above, the Technical Memorandum clearly and accurately states that the electrical records are for the pumps used to dewater the mine and send water exclusively to the V-ditch. The "possible conclusion" described here is inconsistent with the information provided to T&Y and reviewed for the Peer Review and, thus, incorrect.

Kopania 13

FIGURE: Dewatering Record (gallons per month)

Finally, the August Addendum simply provides power usage records and a translation (and assumption) that the power use was only for pumping to the "V" ditch. No comparison between the timing and quantity of implied pumping to the "V" ditch is made with well level measurements articulated in the Report. In order to reach a possible conclusion that the mining operations have no fault in the current groundwater conditions under the subject properties, it would be require that some comparison of the assumed discharge timing and quantities with measured groundwater levels be conducted. The Technical Memorandum August 12, 2014 memo was prepared to respond to Items b, c, and f of the July 24, 2014 email from Aaron Bock, as is clearly stated in the first paragraph of the Technical Memorandum. The suggested analysis and comparison is based on a faulty premise of cause and effect and would not be useful to determine if mining activities caused water levels in neighboring wells to drop. The water pumped to the V-ditch is the amount necessary to dewater the mine excavation. Therefore, when groundwater levels are high, the pumping rate will be higher, and when groundwater levels are low, pumping rates will be lower. The change in groundwater levels affects the amount of water that goes to the V-ditch, rather than the other way around. As is discussed further below, the Quarry uses a dry-mining technique, whereby all water must be removed from the excavation in order for mining to take place. All water pumped from the mine excavation is and has been pumped to the V-ditch, with the exception of the single wet winter during which some excess water was pumped to the North Pond.

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Conclusion

Kopania 15

The August Addendum lacks any analysis to demonstrate whether a relationship exists between deliveries to the "V" ditch and the groundwater levels underlying the subject properties. The Technical Memorandum was intended as a transmittal of data requested by the County. It was not intended to be a data analysis. Furthermore, and probably more important, statements in the memorandum regarding power records and

Kopania16

the power records themselves seem to conflict with other data discussed more fully in the individual Report sections below. For instance, the August Addendum's statement about "continuous dewatering and discharge to the recharge trench…" conflicts with the Report's representation of timing of dewatering activities. The Technical Memorandum corrects and supersedes the Report on this issue, as described above. It is not clear which representation is correct. Also, given the notations marked by Dellavalle's laboratory personnel regarding "No water in ditch" and "Ditch full," coupled with the seems to indicate that, although pumping was occurring, the discharge was not necessarily to the "V" ditch. The Dellavalle notations refer to the concrete-lined irrigation canal (the "Peoples Ditch"), not the V-ditch, as discussed above and verified in Exhibit A. Rather, the pumping records are likely a good indication of a portion of the first required reporting item for Condition 48 – "*the locations and amounts of mine dewatering*." Although the "amounts of mine dewatering" may be provided, the "locations" are not. The August 12, 2014 Technical Memorandum clearly describes the locations of the discharges.

Kopania17

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Report Section 1.0 Introduction

This section of the Report identifies two of the primary governing Conditions: 46 and 49 and notes that they are "*used as* the *basis for the technical evaluation of the complaints…*" (Report, p. 3). This section also notes other information considered by the Report including: "*the history of mining and dewatering at the Stillwell Quarry, the available data regarding water levels in neighboring wells and monitoring wells on the Stillwell Quarry property, rainfall data for Lemoncove, and hydrologic conditions on the Kaweah River.*" (Report, p. 3/4).

Assessment

While the two conditions cited are vital, the Report failed to discuss Condition 48 or 55, among others.[2] These particular Conditions include the following:

> Condition 48: *In addition to the Annual Groundwater Monitoring Report required by the Groundwater Monitoring Plan, the applicant shall make available to the RMA on a monthly basis, data concerning (1) the locations and amounts of Mine dewatering, (2) the locations and amounts of water delivered to the recharge trench, and (3) the locations and amounts of dewatering delivered elsewhere. This data shall be tabulated and provided in a form acceptable to the RMA.*

> Condition 55: *The proposed "V" ditch along the east side of the project site shall contain a sufficient amount of water in order to establish a groundwater mound (groundwater barrier) to maintain water levels in neighboring wells. The trench shall be constructed to a depth sufficient to intersect the layer (substrata) of cobbles, or comparable pervious materials, that occurs locally beneath the site (a*

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[2] The August Addendum, assessed previously, meets a portion of the data requirements of Condition 48. But as noted previously, it is not clear which of the subsets of data it actually represents. As discussed above, the Technical Memorandum clearly states which data are represented.

Kopania19

depth of approximately 6 to 8 feet).<u>*See comment above regarding the "No flow in ditch" notes. As defined in this Condition, the depth of the V-ditch was below the groundwater level at the time the "No flow" notes were made.*</u> ***The sides and bottom of the "V" ditch shall be designed and maintained to maximize the amount infiltration necessary in establishing the groundwater mound. Water produced from dewatering the mine site shall not be pumped directly into the "V" ditch, but shall initially be pumped into a holding basin(s) to allow fines in the water to settle out and flocculation and precipitation of dissolved iron minerals to occur.***

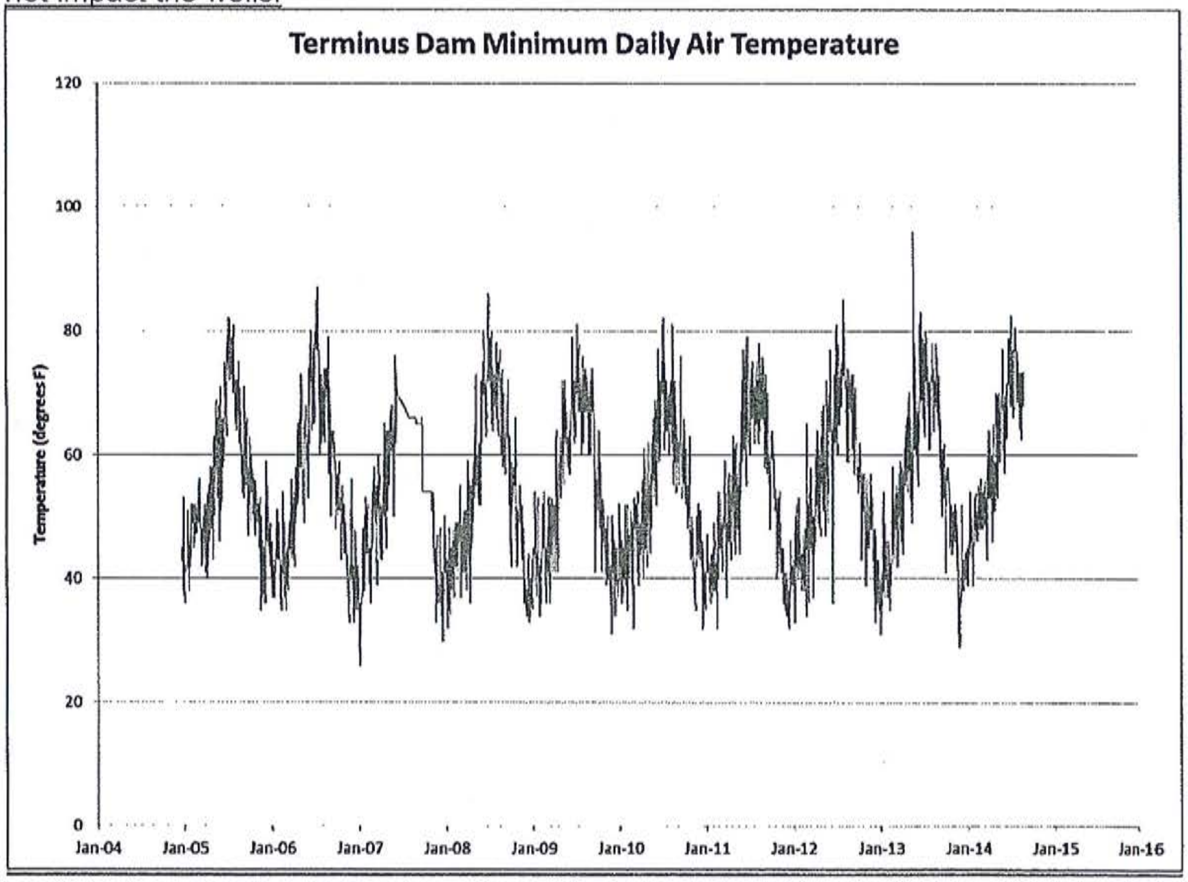
Kopania 20

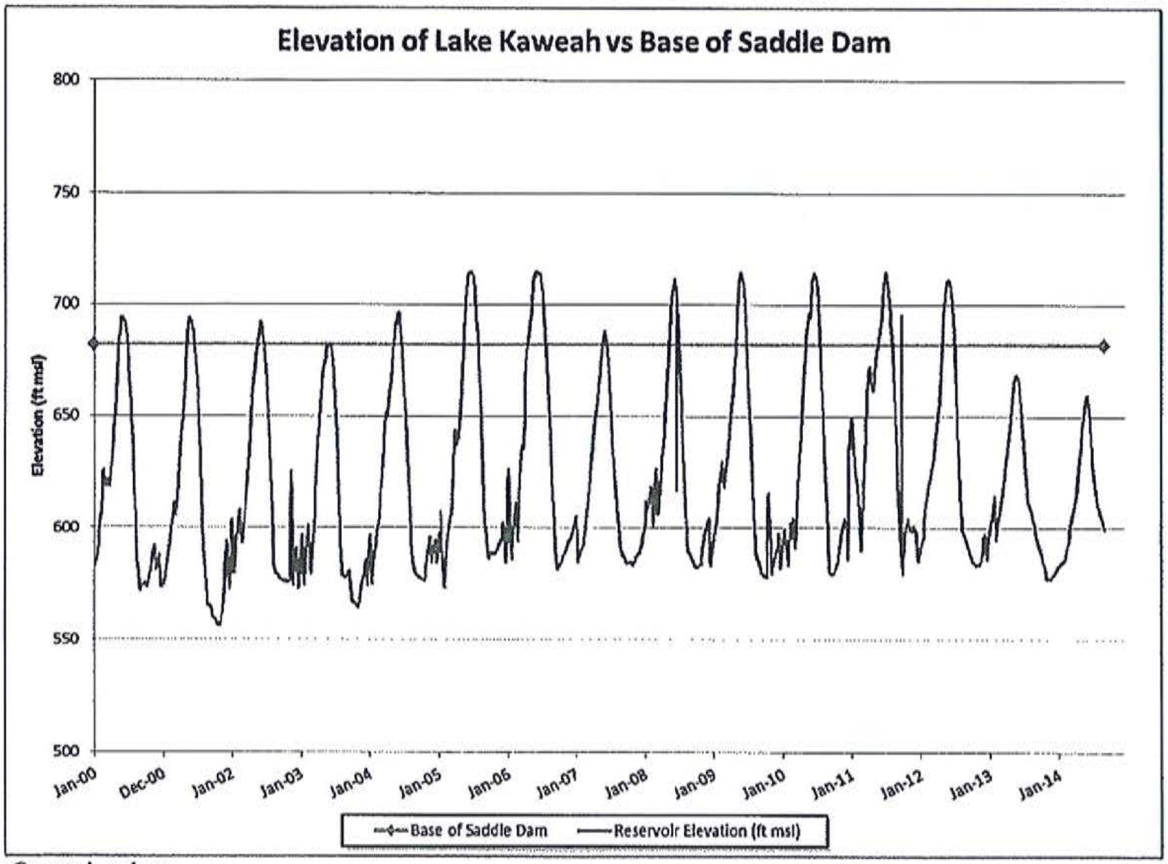
Additionally, while the other information cited as "considered" by the Report would generally be informative and useful for an evaluation such as this, the Report did not identify other considerations that could also be informative such as: (1) new wells drilled or used uncharacteristically upgradient from the neighboring wells that could contribute to groundwater conditions (e.g. to provide frost protection during extremely cold temperatures in early December 2013, or as an irrigation source in place of surface water from the Lemon Cove ditch or Foothill ditch), <u>Given that there is only about 15 to 20 feet of alluvial material above bedrock at the locations of the neighbors' wells, there would be insufficient aquifer capacity for commercial-scale irrigation wells upgradient within the alluvium. Pumping from deeper bedrock wells for irrigation, upgradient or otherwise, would not impact the water levels within the alluvial aquifer. This information was implicit in the Report's evaluation. Furthermore, per the Stillwell Quarry permit, CEMEX is not required to identify or evaluate each potential effect that could be causing a decline of water levels in Quarry neighbors' wells, rather, it is required , only to evaluate the effects of *mining* on these water levels. (See Condition 49 requiring an evaluation to determine if reported well problems are "caused by mining activities.") Even if such an analysis were required, the need for frost protection in early December 2013 in the area uphill from the neighbors' wells is speculative and does not appear to be supported by any empirical data. Temperature data from Terminus Dam show that the temperature only dropped below 31 degrees F on one day in December 2013 (see graph below). According to information from UC Davis, the critical frost damage temperature for citrus is below 31 degrees F (http://homeorchard.ucdavis.edu/8100.pdf). In addition, such external effects would not explain the very low water levels in the Morton well extending from January 2012 to August 2012 and again in September, October, and November 2013.</u> **or (2) historic changes in water level in Lake Kaweah an its potential relationship to localized hydraulic gradients.** <u>There is no known or demonstrated hydraulic connection between Lake Kaweah and the alluvial material extending from the eastern saddle dam down toward the neighbors' wells. Regardless, a preliminary review of water levels in Lake Kaweah conducted by EMKO prior to preparing the Report indicated that Lake Kaweah water levels fluctuate dramatically each year and are only near the elevation of the base of the saddle dam for very short periods of time, providing little, if any, opportunity for lake water to percolate through the saddle dam. The figure below shows the water surface elevation in Lake Kaweah since January 1, 2000 plotted against the elevation of the base of the saddle dam on the interior (lake) side (approximate elevation of 680 ft msl). The data demonstrate that the water level in Lake Kaweah fluctuates dramatically, in sharp contrast to the very stable water levels in the neighbors' wells from June 2005 through the end of 2011. The water</u>

Kopania 21

level in Lake Kaweah only reaches the elevation of the base of the saddle dam for a short period of time most years, while in other years, such as 2013 and 2014, it does not reach that elevation. The low water levels in 2013 and 2014 are properly considered a drought effect, not a separate "consideration", as inferred above. The Report also did not reference any of the prior analysis prepared and presented in the original 2002 EIR – in particular the *Hydrologic Data Evaluation Report*, June 10, 2002 that was also prepared by EMKO (see **Attachment 7**). This particular document included extensive analysis in 2002 of the existing property's (pre-Quarry) relationship with localgroundwater levels and subsurface flow and direction. The 2002 report and EIR concluded that mining would not have a significant impact on water levels in the neighbors' wells. The purpose of the new analysis in 2014 was to reassess that conclusion. Thus, the 2014 analysis needed to be based on a de novo evaluation of the data and not rely on the data and evaluation from 2002 that found that the mining would not impact the wells.

Kopania 22





Conclusion

Kopania 23

As noted from reading each Condition, these also should have been part of the Report's "basis for the technical evaluation" of the complaints. Specifically, and as noted previously, (1) lacking the full compliment of data required in Condition 48 presents significant challenges to understand the relation between Quarry operations and neighboring wells, This conclusion is based on a misreading of the Technical Memorandum, as described above. and (2) lacking physical water delivery to the "V" ditch as required by

Kopania 24

Condition 55, which has not occurred since September 2013, presents significant challenges to creating and maintaining a "groundwater mound." This assertion is inconsistent with Quarry permit requirements and the March 24, 2014 RMA internal correspondence, which state that pumping to the V-ditch is to be done when the mine is actively being dewatered.

Kopania 25

Further, and as discussed below in related sections, other external factors should have also been at least noted as needing to be investigated to understand if they could be contributing factors (e.g. when the Lake level fluctuates normally, is there a corresponding affect to groundwater elevations down-gradient from the Lake's southern saddle dam?). See comments above. There is no requirement that CEMEX evaluate potential external factors not related to mining which might impact Quarry neighbors' wells.

Kopania 26

And finally, lack of reference to the original studies prepared to support the EIR is problematic as this information provides vital context to the pre-Quarry conditions, expected impacts, and proposed mitigation strategies that resulted in the adopted Conditions. While the 2002 studies might provide "vital context" to a peer reviewer unfamiliar with the Project, as stated above, the 2014 Report presented a de novo analysis and did not rely upon the previous findings of the EIR. This comment also misrepresents the findings of the EIR, and the fact that no mitigation was required for impacts to neighboring wells, as the EIR concludes that the Quarry would have a less than significant impact to water levels in these wells. The V-ditch was not a mitigation strategy to offset potential impacts, rather it was a condition negotiated between CEMEX and RMA Staff at the time of the Project approvals and imposed by the County as a condition of approving the Quarry permit.

Report Section 2.0 Nature of the Complaints

This section of the Report simply lists the complaint letters from January 2014, references a figure and summarizes the complaints as "*to do with reduced well yield or low water levels, and that the issues began one to two months prior to the end of January 2014 (i.e. late November to late December 2013).*"

No assessment of this section was necessary.

Report Section 3.0 Mining Operations and Monitoring

The first portion of this section describes operations of the Quarry, noting that dewatering began in September of 2008 and that wires were stolen from the pump used to fill the "V" ditch on two occasions: (1) stolen on June 17, 2013 and replaced on June 21, 2013, and (2) stolen on September 4, 2013 and not replaced. No water has been pumped to the "V" ditch since September 4, 2013.

The section continues by detailing the monitoring of groundwater levels since May of 2005 and discusses analysis of groundwater levels from the individual well data. The section concludes by stating: "[T]*hus, the low water levels reported in the complaints discussed in Section 2.0 are not a recent incident and have been occurring cyclically since at least August 2011. The data clearly demonstrate that the groundwater level in the area was already dropping rapidly prior to the shutdown on September 4, 2013...*" (Report, p. 5)

Assessment

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The Report's generalized assessment of groundwater level data from individual wells is misleading and potential wrong. Lacking a common datum to reference the individual well data, and lacking clarity or assessment in the August Addendum regarding the quantities delivered to the "V" ditch as required by Condition 48, it is not possible to reach a conclusion about any relation between water delivered to the "V" ditch and the groundwater levels in the individual wells. A common datum is not necessary to support the conclusions reached by the Report. For instance, if the water level drops two feet in a well, the direction (down) and magnitude of change (two feet) are the same, whether this measurement is recorded as feet below the top of the well, or converted to a common datum such as feet above mean sea level. This is clearly illustrated below on the Hydrograph for the Morton Well that compares the data in terms of the elevation relative to mean sea level and the depth below ground surface. As shown, the data points and the curve connecting the data points are identical. Thus, it is also possible to compare the data between different wells in the same manner, in terms of trend (up or down) and magnitude (feet of water level change). For example, the fact that the water level in the Morton well dropped almost 11 feet from October 2011 to May 2012 is discernible whether or not the well location has been surveyed to a common datum. **For instance, if during the prior instances when wells were noted to have appreciable decreases (e.g. the Report draws attention to period of August 2011 until May 2012), water of sufficient quantity was not being delivered as required by Condition 55, then it is possible the lower groundwater elevation readings were a result of insufficient water in the "V" ditch and not, as the Report contends, part of cyclical decreases caused by other factors.** Based on the water levels in the neighbors' wells, sufficient water was undoubtedly being provided to the V-ditch from January 2006 to October 2011 to address any potential effects of *mining*. The pumping data shown in T&Y's Figure 1 show that the monthly quantity of water pumped to the V-ditch from October 2011 through August 2013 was consistently within the same range or higher than the volumes pumped to the V-ditch from January 2006 to October 2011. The objective of the V-ditch is to maintain water levels to the east of the ditch so that they are not affected by *mining*. The V-ditch was never intended to protect the neighbors' wells from drought or other actions outside of the boundary of the mining project. It is undisputed that the V-ditch achieved these objectives until the onset of the current drought and drought-related actions (e.g. reduced releases to the Kaweah River). **The August Addendum does indicate dewatering activities during this period (see Figure 1). But if groundwater levels were dropping as noted, would increased discharges have stabilized or reduced the lowering?** As stated in the Quarry Permit Conditions of Approval, the water to be pumped to the V-ditch is that quantity of water which is dewatered *from the Quarry pit*. During mining, the pit is maintained in a dry condition with all water in the pit removed and transferred (after settling) to the V-ditch. Therefore "additional" water cannot be pumped from the Quarry pit. The Quarry permit contains no requirement that would obligate CEMEX to obtain additional water from some other location to pump into the V-ditch. **Condition 55 specifically states that water of sufficient quantity to maintain groundwater levels be delivered to the "V" ditch.** This is a misinterpretation of the actual permit requirements because it is taken out of context. The 2002 EMKO Hydrological report (p. 15, 2nd paragraph) states that the V-ditch "will prevent a drop in water levels within the private wells that might otherwise be caused during the gravel mining operations." There is no intent in the Condition to provide more water to the V-ditch than is actually being pumped from the mining pit. As discussed above, the data clearly show that the dewatering of the mine did not affect the water levels at the neighboring wells from January 2006 to October 2011, prior to the onset of the current drought.

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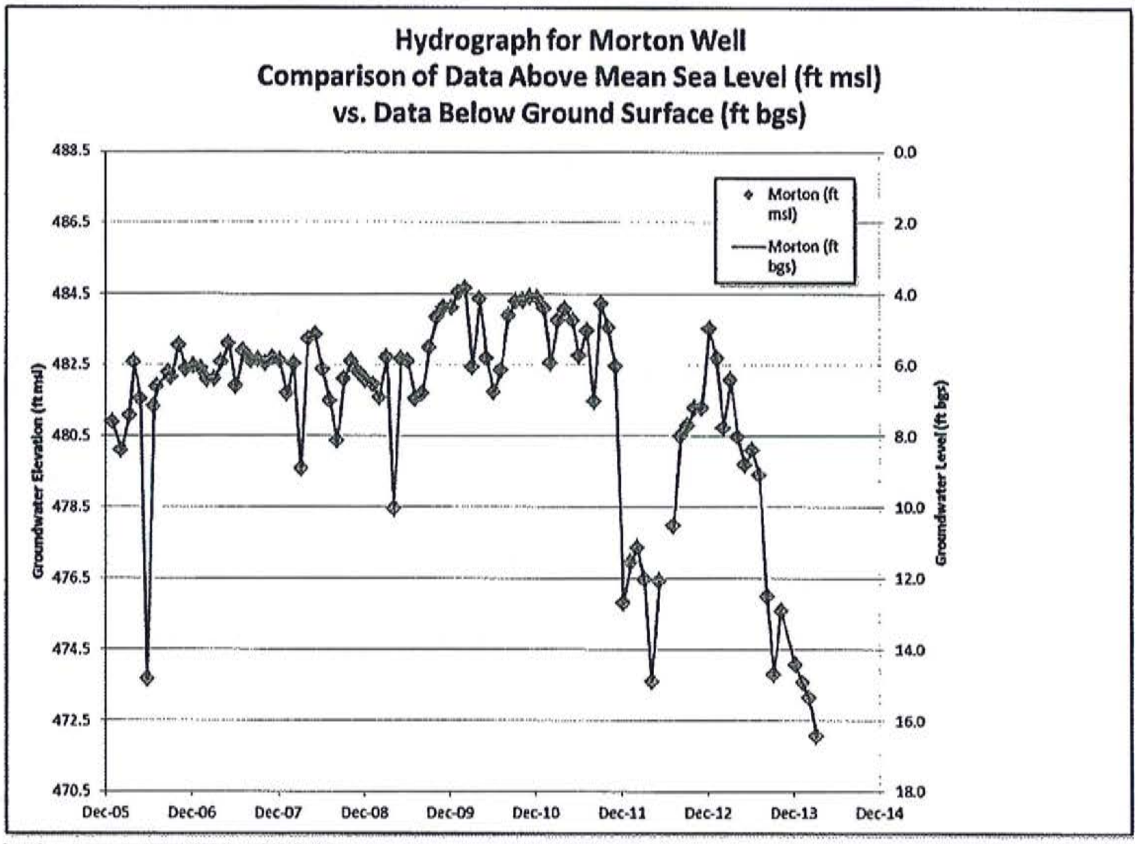

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Essentially, lacking the fundamental data, no analysis can be completed to understand whether the amount of water delivered to the "V" ditch was "sufficient" to meet the groundwater-mounding objective. The fundamental data are presented in Table 1 of the T&Y peer review and the hydrographs in the Feb 2012 Report. The Report, therefore, cannot conclude that water was always in the ditch since 2008 when it has no data from which to base that fact. This statement is incorrect; please refer to the comments above regarding the Technical Memorandum. And thus, it cannot be concluded that historic fluctuations in the water levels – with lowered groundwater levels equivalent or even greater than being experienced in January 2014 – were due to factors beyond the control of the Quarry's operation. Again, absent the vital facts, it is plausible that decreases seen in previous months correlate to periods when *insufficient* water was ~~not~~ (This appears to be a typographical error.) being delivered to the "V" ditch. Absent the facts, no analysis can be made, thus no decisive conclusion can be reached. As discussed in detail above, the "vital facts" were provided prior to the date of the Peer Review (August 25, 2014).

Furthermore, in contrast to the Report's statement: "[T]*he water levels have been measured monthly since May 2005, which is more than three years prior to the beginning of dewatering and use of the recharge trench.*" (Report, p.5), aerial photography from June 2005 appears to show water in a newly constructed "V" ditch.

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The figure below is a screen shot of the June 11, 2005 aerial image showing water in the "V" ditch. The water may have been sourced from the northern pond. Though this may have been a temporary action for testing or the beginning of more routine deliveries into the "V" ditch, the appearance of water in June 2005 contrasts with statements in the Report. According to the August Addendum, dewatering did occur in June 2005. As discussed above, the Technical Memorandum corrects and supersedes the Report regarding the date dewatering began. Note, however, that the V-ditch was excavated below the water table that existed in 2005, so the water visible in the aerial photo could simply be groundwater that had been exposed by the excavation of the V-ditch.

FIGURE – Google Earth Aerial Image from August 26, 2005.

On a related note, reviewing the monthly well data from May 2005 through July 2014 (which extends beyond the data set available at the time of the Report), various observations can be made that are at least as relevant as the statements in the Report derived from the same data. For instance:

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1. The Cairns Well (see Report Figure 5) shows a dramatic drop in water levels between September 2013's reading and October's reading. Though this well has shown some variability in previous records, this dramatic drop between these two months appears to correlate with the stoppage of delivery into the "V" ditch. Mr. Cairns has stated (both in his January 31, 2014 letter to the County and at variousmeetings) that his well has not been affected by the CEMEX mining operations.

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2. The Morton Well (see Report Figure 4) shows a downward trend between January and August 2013 that, if projected to continue at the same rate, would drop slightly below 10 feet by November 2013. Instead, the well drops significantly by October, well below what would have been projected. This also corresponds to the stoppage of delivery to the "V" ditch. A temporal correlation does not demonstrate causation in the absence of other evidence. For instance, the same change in rate of drawdown is also seen in January 2012 in the Morton well, at a time when relatively high volumes of water (in fact, higher than in any prior year) were being pumped to the V-ditch.

3. The well data recording depth was often accompanied by a note if something relevant was encountered. For instance, the note may say "ditch was full" or "well was running," or may note that no key was available and therefore no reading taken. Many instances have no notes recorded in the spreadsheet, but that may not mean relevant factors should have been noted. For instance, in the Report's Figure 5, the Cairns well shows a series of high and low recordings starting about September of 2011 through May of 2012. There are no notes corresponding to any of these readings. Is it possible that the well was or had previously been running at the time of the readings? What other events would make the values jump up and down? The corresponding data for the Morton well

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(see Report Figure 4) is only lower during the period. Why did it not also experience the high and low fluctuations? Similarly, the four monitoring wells (located along the "V" ditch alignment on the upgradient side) also showed a drop during this period. But they also all have no records for several months with notes stating "no key." It is unclear what point is being made here, but it seems to be a stretch to state that the Report's technical analysis is uncertain because there may or may not have been field conditions that were or were not noted.

These assessments could lead an evaluator of the data to different conclusions than those reached in the Report. This again is illustrative of the point that lacking all of the pertinent facts limits the ability to make decisive conclusions about cause and affect .

Finally, this section makes an important anecdotal note that states: "*The quarry pit had filled with water to a depth of approximately 15 feet below ground surface, as shown in Figures 2 and 3.*" (Report, p. 4/5). When reviewing the 2002 hydrologic report prepared in support of the EIR, during pre-project conditions, groundwater elevations were noted to be between 3 and 6 feet below the ground surface. This illustrates a simple fact that is not assessed by the Report – that the open pit creates a different hydraulic condition than if the material were left undisturbed. In other words, with the removal of material that previously contributed to the hydraulic gradient affecting the subsurface flow of groundwater, the gradient has changed. Groundwater still flowing subsurface but upgradient from the open pit now has a new lower elevation to seek as it flows underneath the subject properties. This is an incorrect interpretation of the conditions at the site. The Quarry is permitted and operates as an alluvial aggregate mine, as opposed to a bedrock aggregate mine which would require blasting and other bedrock mining techniques. The mine pit is not excavated into bedrock below the base of the shallow alluvial aquifer. Therefore, there is not a "new lower elevation" into which the groundwater can accumulate. The mine pit is simply a window excavated into the shallow alluvial aquifer and does not impact the depth of the alluvial aquifer. When the pit is not being dewatered, the water level in the pit represents the average level of the groundwater in that area of the aquifer, with groundwater flowing into the upgradient side of the pit and subsequently flowing out of the downgradient side of the pit. Except very locally (within approximately 100 feet to 200 feet of the pit, per Figure 3 of the 2002 EMKO report), the Quarry does not affect the flow of groundwater in the region. The neighbors who allege their wells have been affected are located approximately 1,000 feet to more than 1,600 feet away from the current Quarry perimeter, and are side-gradient to the pit, meaning that they are not along the flow path of the water flowing into or out of the mine pit. The closest well to the pit (approximately 500 feet away), the Cairns well, has not been affected by the mining, per the owner's statements. The lower water level in the mine now, as compared to previous years, is a result of the regional lowering of groundwater due to the drought. As was originally identified and the primary reason for the Conditions, the open pit would have this affect. This statement is incorrect. The EIR concluded that the mining would not have any effect on the neighboring wells. Thus, the "V" ditch was designed as mitigation to provide a groundwater mound (e.g. a method to maintain the pre-project

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hydraulic gradient). The V-ditch was not a mitigation measure, as the EIR determined that the project would have a less than significant impact on neighboring wells. The V-ditch was imposed as a Condition of Approval of the Permit and accepted by CEMEX.. **The need for a long-term solution to this issue is also recognized with the planned design of the reclaimed mine site. As planned, there will be two reclaimed lakes of different elevation. The "V" ditch or similar recharge trench is to be constructed, in conjunction with a series of weirs, to "*maintain current groundwater elevations along the properties to the northeast of the project area.*" (Condition 52.)** This statement misrepresents the reason for the berm between the two lakes and the V-ditch connecting the lakes. A seven-foot difference in groundwater elevation will exist between the upgradient and downgradient edges of the mine pit upon completion of excavation. Without additional reclamation of the mine pit, a large pit lake would form which would be higher than the ground surface at the downgradient (southwest) edge of the property during high groundwater conditions due to the leveling which occurs within a large lake that intersects the groundwater surface. This could result in flooding or high groundwater levels that would impact downgradient properties. A larger lake would also be more susceptible to wind fetch and wave erosion. Therefore, the EIR and Reclamation Plan for the Quarry establish a two-lake system as noted above to avoid the potential problems of a single lake. This issue is addressed in Impact 4.4-5 of the 2002 Revised Draft EIR (page 4-68).

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These facts demonstrate that during analysis of the project prior to approval, concern was expressed about the open pits creating a lower groundwater elevation and adversely impacting the hydraulic gradient of subsurface flow under the subject properties. Concern was expressed by neighbors who presented no scientific or other evidence to support said concerns. The detailed technical and CEQA analyses upon which the County was required to rely, however, showed that the project's impacts to neighboring wells would be less than significant. The Peer Review should not conflate these unsupported concerns with scientific evidence. **The Report clearly provides evidence that the water elevation in the open pit is as was expected, yet it does not appear that the planned for mitigation, as recognized in the Conditions, is sufficiently providing a groundwater mound.** This statement is incorrect. As discussed on page 4-68 of the 2002 Revised DEIR, the expected water level in the final pit lake was between 477 ft msl and 485 ft msl. Due to the drought conditions, as of August 2014, the water level in the pit was at 467 ft msl. In addition, as discussed above, the V-ditch is not a mitigation measure, as no significant impact was identified, but rather a Condition of Approval accepted by CEMEX. This discussion also misrepresents the objective of the groundwater mound. The goal of the mounding was not to maintain pre-mining groundwater elevations, but to retain water which was flowing downgradient toward the naturally lower portion of the alluvial aquifer in which the Quarry pit is located. If the natural subsurface flow is reduced during a drought, the mound is unable to make up for that.

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Conclusions

The Report is too quick to reach decisive conclusions when relevant facts necessary for reaching such a conclusion is absent. This sentence is incorrect for two reasons: First, Section 3 of the Report (which this portion of the Peer Review is evaluating) does not

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present any conclusions. Conclusions are not presented until Section 6 of the Report, after all of the facts and information are presented in the report. Second, the facts are not "absent," but have merely been misinterpreted or overlooked in the Peer Review, as discussed in detail above.. Though the conclusion may still be accurate if it were to be reassessed with all relevant facts available, making such conclusions absent them is without merit. Even with the additional information provided in the August Addendum, there are not enough relevant facts and analysis to reach determinant conclusions.

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The Report attempts to remove any fault from CEMEX through its interpretation of the limited groundwater elevation data and associated notes. This statement misrepresents the Report's analysis, which is based on groundwater elevations, history of pumping, rainfall data, and river flow data. As noted above, Section 3 of the Report does not reach any conclusions regarding "fault from CEMEX" (sic.). Thus, this portion of the Peer Review does not discuss the materials actually presented in the Report. As stated previously, the current unprecedented drought condition is a primary contributing factor to current degraded groundwater conditions at the subject properties. But absent an understanding of the relationship of groundwater mounding to the upgradient groundwater elevations, CEMEX cannot be summarily excused from fault. Again, Section 3 of the Report does not "summarily excuse" anything, as that section of the Report does not draw any conclusions.

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Report Section 4.0 Rainfall Data for Lemon Cove
This section presents historic rainfall data for Lemon Cove. The Report states: "*Although the 2013-2014 water year is not complete, the first four months of this water year have been the driest October-January period measured in Lemoncove since 1923, based on the CDEC data.*" This fact illustrates the severity of the drought.

No assessment of this section was necessary.

Report Section 5.0 Hydrologic Conditions on the Kaweah River

This section discusses historic flows on the Kaweah River ("River") and presents that "[H]*igh river flows can recharge the local groundwater aquifer from the area north of the Stillwell Quarry...*" (Report, p. 6). The Report also notes that "[C]*onversely, low river flows may not provide any recharge and can also allow the aquifer to drain more rapidly toward the river.*" (Report, p. 6). The Report elaborates on the timing and duration of flows to the River and compares conditions from October 2010 through early February 2014, implying the likely affect to recharge during these different water years.

Assessment
As detailed in the Report's Section 2, complaints about water levels began in early to late December of 2013. At that time, releases from Lake Kaweah ("Lake") had been nearly zero for at least a month. The Report's data and figures imply that that the limited irrigation releases during the summer and no flood releases during the winter months are primary factors in the lowering the groundwater under the subject properties.

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Section 5 of the Report only presents data. This Section makes no implication and presents no conclusions regarding the complaints received by the County.

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However, this cyclical period of flows has been routine for decades with no identified impact to groundwater levels at the subject properties. For instance, looking at the 2006 to 2007 condition, releases from the Lake became near zero by October 1, 2006 and remained as such until January 2007 (Report, Figure 9). Although the releases from Terminus Dam may become very small, they are typically not zero. From October 1, 2006 to January 2007, the flows averaged approximately 20 cubic feet per second. Furthermore, the discussion in the Report relates to the volume of the releases at specific times, not the rate of the releases. Rainfall during this period was also below normal, comparable to the rainfall in 2012/2013, which the Report notes was part of the lead up to the current degraded condition (Report, Figure 8). When inspecting the well level monitoring data for this period, the wells on the subject properties and the monitoring wells were all stable, with no apparent impact from the near zero flows and limited rainfall for October 2006 through January 2007. This discussion misses the entire point of the data presentation. The area under the curves representing the river releases in Figures 10, 11 and 12 of the Report indicate the *total volume* of the releases. It is the progressive and dramatic decline in the *total volume* of releases over the last few years that is causative. The periods of very low flow are not the focus of the analysis; rather, it is the successive dwindling of major releases over the last several years that is distinctive and unique. It is important to note that excavation of the Quarry had not yet begun as of that period, according to the Report. In contrast, the August Addendum indicates that dewatering began on a continuous basis beginning in January 2006 (see **Figure 1**) – which again raises questions about contradictory statements between the Report and the August Addendum. As stated above, the Technical Memorandum corrects and supersedes the February 2014 Report regarding the start of excavation and dewatering. Excavation and dewatering had begun and were ongoing during the period from October 2006 through January 2007 and therefore the Peer Review's statement to the contrary and any implications drawn therefrom should be corrected.

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The Report also states that the River functions to recharge the local aquifer from the north. However, this appears to be in contrast to a few other previously provided facts – namely the analysis to support the EIR. The EIR's hydrologic study states the following with regard to River recharge:

> 1. "*According to the property owner, if riparian water is not provided to the northern ponds, the ponds would become dewatered very rapidly. In addition, the owner reports that once the ponds are dewatered, it would take a very long time to recharge the ponds with groundwater inflow from the upgradient direction and lateral inflow from the Kaweah River through the geologic material present between the river and the ponds. Thus the primary source of water with the northern ponds is riparian water that is diverted from the Kaweah River.*" (p. 10, Section 3.3, Hydrologic Data Evaluation Report, EMKO, June 10, 2002, see

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Attachment 7). This statement from the EIR does not contrast with the Report. The EIR clearly states that lateral inflow (i.e. recharge of the alluvial aquifer) from the river occurs, but that according to the landowner, such recharge would take "a very long time." It should be noted that the meaning of "very long time" is relative, and in this case the landowner is talking about recharge relative to his irrigation practices. Recharge in geologic terms occurs at much slower rates than the rates at which groundwater is often extracted for irrigation purposes and therefore this statement should not be relied upon to conclude that recharge from the River is absent.

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2. "*Thus the groundwater table will be higher than the water level in the river, preventing the flow of water from the river to a dewatered pit during the mining operations.*" (p. 14, Hydrologic Data Evaluation Report, EMKO, June 10, 2002) This statement has been taken out of context. The cited statement refers to the reach of the River adjacent to the western edge of the mine, not the reach farther to the north. Due to the drop in elevation along the course of the River as it flows from north of the Quarry to the area west of the Quarry, the River elevation is higher than the groundwater elevation on the north side of the Quarry but lower than the groundwater elevation to the west of the Quarry.

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3. "*Therefore, the water available to the neighboring wells will remain the same and will come from groundwater flow entering the neighboring properties from upgradient, which is the same source of water currently entering these wells.*" (p. 15, Hydrologic Data Evaluation Report, EMKO, June 10, 2002) It is unclear why the Peer Review concludes that there is a contrast between this statement and the Report. The very northern reach of the River is partially upgradient of the neighbors' wells.

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4. "*In addition, use of a cut-off wall to prevent inflow from the Kaweah River during dewatering is unnecessary, as discussed above in Section 3.3. Specifically, when the Northern Ponds are pumped for irrigation, little or no water percolates in the ponds from the river.*" (p. 15, Hydrologic Data Evaluation Report, EMKO, June 10, 2002) See comments on #1, above. The percolation rate may be slow, but the rate is relative, as discussed above.

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5. Figure 4.4-2 presented in the 2002 EIR (EIR p. 4-53) graphically represents the groundwater flow direction as east to west across the Quarry to the River, with no flow coming from the River from the northern area. A copy of this figure is included below. The figure presented within the text of the Peer Review does not appear in either the 2002 EMKO hydrology report (included as Attachment 7 to the Peer Review) or in the 2002 Revised DEIR. The County has apparently provided T&Y with an incorrect draft version of the published EIR and accordingly the evidence discussed here in the Peer Review is incorrect. The two different versions of the figure are presented below for comparison. The first figure is the incorrect version relied upon by T&Y, while the second figure is the one that appears in the Revised DEIR which is included in Part B of the June 2002 FEIR.

It should also be noted that the correct version of this figure appears as Figure C-1 in Attachment 7 to the Peer Review (see Peer Review PDF page 121 of 135). There is a substantial difference between the two contour maps, which results in an incorrect conclusion by T&Y in the Peer Review.

FIGURE – Fig 4.4-2 from an old (?) version of the DEIR.

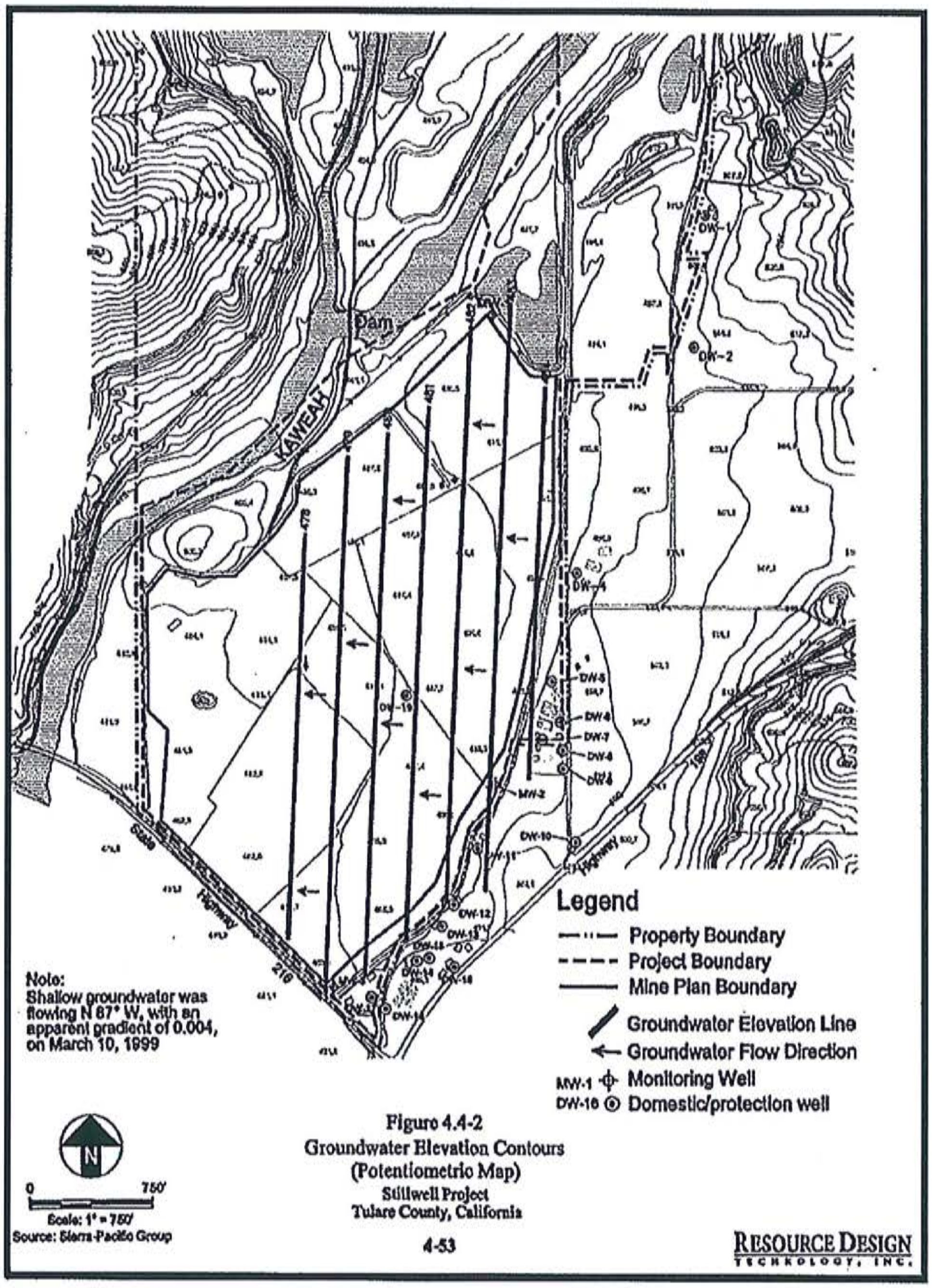

Figure 4.4-2
Groundwater Elevation Contours
(Potentiometric Map)
Stillwell Project
Tulare County, California

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Correct version of Figure 4.4-2 from the published FEIR:

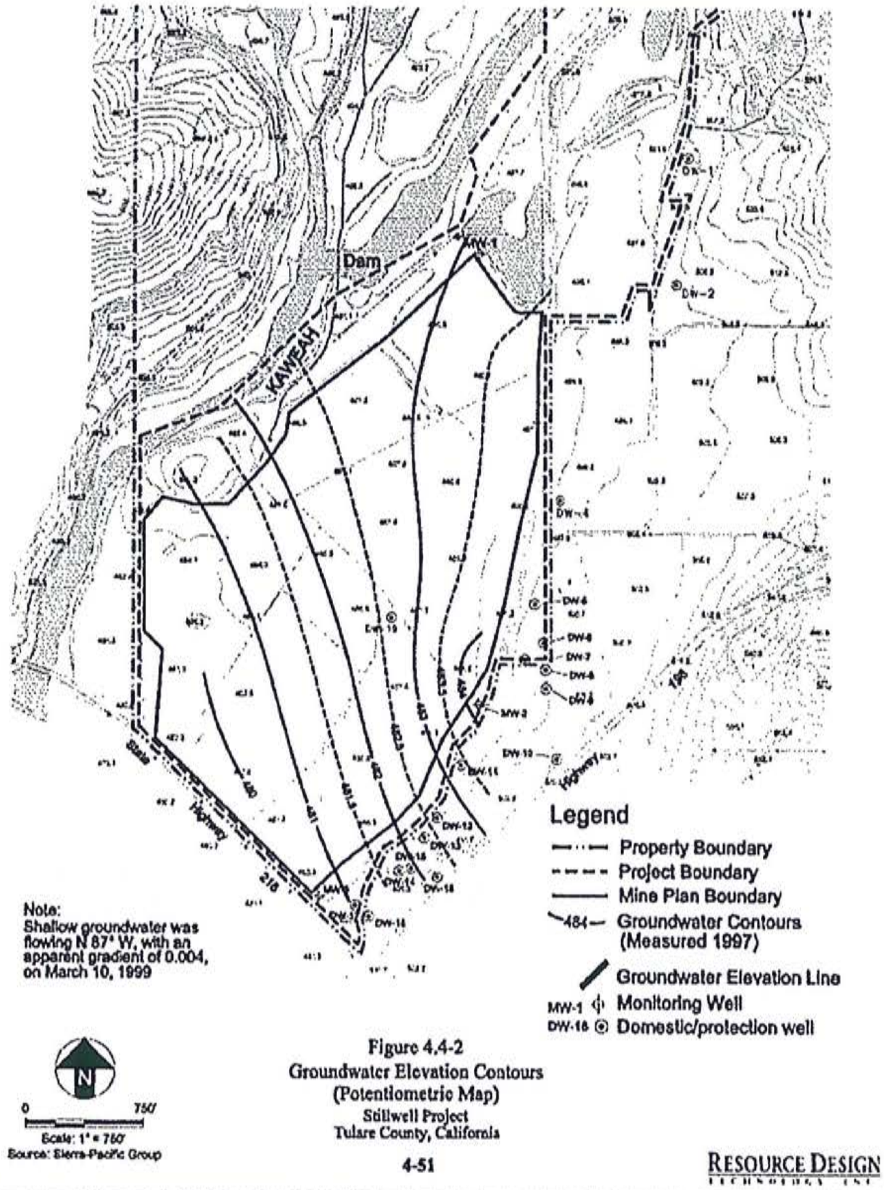

Figure 4.4-2
Groundwater Elevation Contours
(Potentiometric Map)
Stillwell Project
Tulare County, California

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As is very apparent from the analysis in 2002, the River does not contribute recharge to the aquifer. This is incorrect. The 2002 analysis did not specifically address this issue and does not provide any data that could lead to this conclusion. However, during pre-project conditions, it likely had an influence on the
hydraulic gradient and flow conditions that underlay the subject properties – essentially a mounding affect. The data and analysis presented in the 2002 hydrology report and the 2002 Revised DEIR are completely contradictory to the speculative conclusion presented in this sentence of the Peer Review regarding the Kaweah River having a mounding effect. The river acts as a drain, with water from the Stillwell site discharging

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to the river. This is shown repeatedly in the Revised DEIR and the 2002 hydrology report as follows:

1) DEIR page 4-48, first full paragraph, last sentence: "The Kaweah River reportedly gains water as it passes the Stillwell pasture."
2) DEIR Figure 4.4-3, page 4-57, and 2002 EMKO report Figure 1 showing Discharge to the Kaweah River for both current conditions and active/post-project conditions.
3) DEIR Impact 4.4-5, page 4-68: "Groundwater elevations at the northeast, upgradient side of the proposed quarry are approximately 484 feet above mean sea level (ft amsl). Groundwater elevations at the southwest, downgradient side of the proposed quarry are approximately 477 ft amsl."
4) 2002 EMKO report Figure 2 showing the water elevation in the river consistently below the water levels in the onsite monitoring wells.
5) 2002 EMKO report Figure 3 cross section showing the pre-mining water level under the site consistently above the water level in the river.
6) 2002 EMKO report, page 19, Potential Impacts on Flows Within the Kaweah River, first sentence: "The groundwater surface elevation beneath the pasture in the project area is about 15 feet higher than the water level in the Kaweah River at the Highway 216 bridge...indicat[ing] a large amount of discharge from the Stillwell pasture to the Kaweah River..."
7) EMKO 2002 report, page 19, second paragraph, first sentence: "For current conditions, the total discharge to the Kaweah River is 1,310 AF/yr for the 137-acre project site."

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This fact seems to be apparent since the Quarry's mitigation to address concerns about groundwater levels dropping under the subject properties was to build the "V" ditch to mound water and maintain hydraulic gradients The Peer Review confuses speculation with fact. As listed above, there are numerous citations to the 2002 Hydrology Report and Revised DEIR that demonstrate that the river acts as a drain, not a mound or barrier. Furthermore, as described above, the V-ditch is not a mitigation.

Conclusion

The current unprecedented drought conditions are having an effect throughout the state on a multitude of factors such as reservoir elevations, stream flows, recharge to groundwater and groundwater levels. However, at the time of the complaints the severity of the current drought was not yet fully apparent – as it was January and wells were seeing problems starting at least the prior month. This statement is incorrect. As early as May 2012, the water levels in the neighbors' wells had dropped to the same levels observed in late 2013 and 2014. In addition, Governor Brown issued an Emergency Drought Proclamation on January 17, 2014. Furthermore, the April 30, 2014 Public Update for Drought Response report from DWR notes that: "Since spring 2008, groundwater levels have experienced all-time historical lows...in the southern San Joaquin Valley"; "In many areas of the San Joaquin Valley, recent groundwater levels are more than 100 feet below previous historical lows"; and "The Kaweah and Kings subbasins have the greatest numbers of deepened wells in an alluvial groundwater

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basin." Thus, it is incorrect to state that "at the time of the complaints the severity of the current drought was not yet fully apparent."

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When looking at the historic near-zero flow conditions similar to that in 2012 and 2013 with low rainfall, coupled with statements about the limited, if any, recharge benefit from the River, the Report's implied conclusion that conditions in late 2013 and January 2014 create a condition severely different than experienced in the past seems baseless. This statement ignores the fact that the groundwater level in the neighbors' wells had already dropped to comparable levels in 2012, the rainfall is the lowest ever recorded in more than a century, and the cumulative releases from the dam are the lowest ever. These are conditions that have never been recorded or reported in the past.

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Similar to every other conclusion of this peer review, the absence of all of the pertinent Facts – especially routine representations of groundwater contours and hydraulic gradient estimates – make it extremely difficult to evaluate the relationships of the River and rainfall to groundwater elevations under the subject properties. As such, the Report should not make decisive statements that excuse CEMEX from any fault. This section of the Peer Review states that it is evaluating Section 5 of the Report. Section 5 of the Report does not make any decisive statements or present conclusions of any sort. Thus, the Peer Review assessment and conclusions related to Section 5 are not based upon the actual information presented in Section 5.

Report Section 6.0 Summary and Conclusions

This section restates a few key facts, and then begins a series of summary statements of its prior evaluation and conclusions. The Report includes two key statements in this section:

1. "*The declining trend in 2013 began as early as February, six months before the*
discharge of water to the recharge trench was stopped. There is not a correlation between the cessation of discharge to the recharge trench and the water levels in the wells." (Report, p. 8).

2. "*It is also worthwhile to note that, had the data supported the opposite conclusion, two of the potential remedies identified in Condition of Approval No. 49 are to reduce the amount of pit dewatering, or if necessary, cease mining operations. Both of these conditions have existed at the site since September 2013.*" (Report, p. 8).

Assessment

The assessment of each section, as detailed above, is relevant to the summary statements of the Report. Please refer to those prior assessments for further detail. With regard to the two key statements made in this Section, the following is offered for consideration:

1. The current drought very likely has had an adverse impact on localized

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groundwater conditions. Whether due to other external factors from higher pumping by other groundwater users even further upgradient and less inflow from the normal recharge sources, the groundwater levels would likely decline. This trend, as noted by the Report, appears to have begun by the spring of 2013. The Report actually notes that this trend began in early 2012. However, because pertinent reports were not prepared and provided to the County and the water discharges to the "V" ditch were stopped in September, the rate of decline very well could have been exacerbated by the actions of CEMEX.

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This statement is inconsistent with the conditions that occurred in 2012, when pumping to the V-ditch was as high as in any previous year, yet water levels in the neighbors' wells declined almost as far as they did in 2013. In addition, as discussed above, the V-ditch was installed to address the effects of *mining*. No mining was occurring in late 2013 and 2014. The Report cannot make decisive statements that there is not a correlation between discharge to the "V" ditch absent further understanding of what conditions would have been had sufficient water been in the "V" ditch as was required by Condition 55.

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As discussed above, the only water available to be pumped into the V-ditch is the water that is pumped from the mine pit for dewatering. There is no other water available or required to be pumped by the Conditions of Approval in the Permit.

2. The Report clearly leaves out key text from Condition 49 as it attempts to imply that the same degraded groundwater conditions would occur if the remedy of ceasing operations or reducing the amount of pit dewatering were imposed. Condition 49 clearly states: "*If a significant problem…be caused by mining activities, then immediate action must be taken to correct the condition, which may include (but is not limited to) modifying the recharge ditches to provide more recharge capacity, reducing the amount of pit dewatering, or if necessary, ceasing mining operations.*" The first focus is on modifying the recharge ditch,

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All of the water pumped from the mine is (after settling) discharged to the V-ditch. Since the pumping occurs solely to dewater the mine, when the mine is completely dewatered, there is no additional water to pump to the V-ditch. In addition, all of the water pumped into the V-ditch percolates back into the ground and again becomes part of the alluvial aquifer. Thus, there is not any practical way to modify the V-ditch to provide more recharge capacity. All available water pumped from the mine is already recharging the shallow alluvial aquifer via percolation through the V-ditch.

but the Condition also leaves open any option with the included parenthetical. When also considering Condition 55's requirement that "sufficient" water be discharged to the "V" ditch, degraded groundwater conditions could potentially be resolved by simply increasing the quantity of discharge.

Kopania 65

The EIR objective of the V-ditch is to address potential effects of dewatering of the Quarry on the neighboring wells. If all of the water produced during dewatering is being pumped to the V-ditch and recharging the aquifer, but groundwater levels upgradient of the V-ditch decline (for example, as they did in 2012), then the decline cannot be due to the mining activities but must be due to a lack of inflow from upgradient. Similarly, if there is no dewatering occurring, and groundwater levels decline, then the decline is not attributable to dewatering. However, this resolution option appears to not have been recognized by the Report either.

Kopania 66

Furthermore, ceasing mining operations would trigger reclamation actions as detailed in the Quarry's permit conditions, such as Condition 52. In fact, temporary cessation of mining triggers the requirement to file an Interim Management Plan, but does not trigger reclamation of the site if the operator plans to resume mining, as CEMEX does. Accordingly, CEMEX has timely filed an Interim Management Plan with Tulare County to address the temporary cessation of mining as required under the State Mining and Reclamation Act. These reclamation actions included flowing water between two lake elevations through a recharge ditch, using a series of weirs, to assure groundwater elevations on the subject properties were maintained. Adding this statement, which essentially argues that remedies to the current degraded groundwater conditions would result in the same degraded conditions, provides no value to the Report. Rather, by omitting part of the Condition, questions can be raised about the overall evaluation and its conclusions. As described above, those parts of the Condition are not relevant to the current conditions at the site, which is why they were not cited.

Kopania 67

Conclusions

Kopania 68

The Report's overall evaluation is based on an incomplete set of facts. As discussed throughout the comments above, more than adequate data and information were available, but they were overlooked or misinterpreted in the Peer Review. Thus, the conclusion that the Quarry operations are not at fault is without merit. This sentence misrepresents the final conclusion of the Report, which states, "There is not a correlation between cessation of discharge to the recharge trench and the water levels in the wells...[t[he historically low rainfall and river discharge amounts are the most likely cause of the lower groundwater levels observed in the wells in the area...[t]he available data and documentation demonstrate that the concerns identified in the letters received in late January 2014 are not caused by mining activities." It is also important to note that the concerns in the letters relate to "pumping air", which could be resolved by lowering the intake, or in the case of jet pumps or centrifugal pumps mounted at the ground surface, changing pump types. It is possible that the Report's conclusions are completely correct. But, absent relevant data, coupled with questions about the overall evaluation in the Report, as detailed in the sections above, it is difficult to say CEMEX is without fault.

Kopania 69

EXHIBIT A

Letter From Dellavalle Laboratory, Inc.

DELLAVALLE®
Laboratory, Inc.
Chemists and Consultants

Pete Locastro
Cemex Construction Materials LP
13475 N Friant Rd.
Friant, CA 93628

RE: Lemon Cove Facility – Well Monitoring Program

The ditch referred to in the notes of the monthly well sounding data is the small concrete lined ditch which originates just below the Kaweah Dam. The notes do not refer to the "Cemex V-Ditch" which is northwest of the monitoring wells.

Respectfully,

Ben Nydam

Ben Nydam
Certified Crop Advisor # 22552
Dellavalle Laboratory, Inc.

1910 W. McKinley, Suite 110 • Fresno, CA 93728-1298 • (559) 233 6129
www.dellavallelab.com

Attachment C

State of California
DEPARTMENT OF CONSERVATION
2007 MINING OPERATION ANNUAL REPORT
MRRC-2 Page 1

ENTERED

CA MINE ID # 91- 54-0034

MINE NAME Stillwell

1. Company Operating	Site Contact Person	Telephone
CEMEX	Peter LoCastro	(559) 597-2397
Street Address/P.O. Box No.	City	State/ZIP Code/County
24325 Lomitas Rd.	Lemon Cove	CA 92344
2. Designated Agent's Name (individual must reside in CA)	Mailing Address	
Ronald Wilson	5180 Golden Foothill Pkwy., Suite 200	
City	ZIP Code	Telephone
El Dorado Hills	CA 95672	(916) 941-2852

ITEMS BELOW WHICH ARE PRECEDED BY A BOX LABELED N.C. MAY BE CHECKED – IF THERE ARE NO CHANGES IN THE INFORMATION FROM THE LAST REPORTING YEAR. (NOTE: IF THIS IS THE FIRST TIME YOU HAVE FILED A REPORT, ALL SECTIONS MUST BE COMPLETED.)

3. Owner of Mining Operation		Telephone
CEMEX		(916) 941-2852
Mailing Address (this address will be used to send next year's report form)		
5180 Golden Foothill Pkwy., Suite 200		
City	State/ZIP Code	Country (If other than U.S.A.)
El Dorado Hills	CA 95672	

Was this operation purchased by you during reporting year?

☐ Yes. If yes, date of purchase ________ ☒ No.

Was this operation sold by you during reporting year?

☐ Yes. If yes, date of sale ________ ☒ No.

4. Landowner	Assessor's Parcel #
David and Donald Stillwell	See sheet #4
Mailing Address	Telephone
2001 E. Marinette Ave.	(559) 592-5191
City/State/ZIP Code	Country (If other than U.S.A.)
Exeter, CA 93221	

5. Status of Mining Activities DURING THE REPORTING YEAR **CHECK 1 ONLY**

- ☐ Newly Permitted-Not yet in operation. Date Permitted ________
- ☒ Active.
- ☐ Idle (as defined in Public Resources Code Section 2727.1). Complete the following:
  - Date operation became idle ________
  - ☐ Copy of Approved Interim Management Plan attached.
  - ☐ Interim Management Plan pending with Lead Agency. **ATTACH PROOF OF SUBMITTAL**
- ☐ Closed with no intent to resume. Date mining ceased ________
- ☐ Closed—reclamation certified complete by Lead Agency. Date mining ceased ________

6. Status of Reclamation Activities DURING THE REPORTING YEAR **CHECK 1 ONLY**

Received by
DEPARTMENT OF CONSERVATION
JUN 3 0 2008
Office of Mine Reclamation

- ☒ Reclamation not started.
- ☐ Reclamation in progress (attach updated reclamation plan map indicating progress).
- ☐ Reclamation certified complete by Lead Agency. **ATTACH CERTIFICATION**
  - Reclamation certified complete on ________ (Date).
  - Financial Assurances released on ________ (Date).

DISTRIBUTION: Original to State Copy to Lead Agency Copy to Operator

State of California
DEPARTMENT OF CONSERVATION
2007 MINING OPERATION ANNUAL REPORT
MRRC-2 Page 2

CA MINEID# 91- 54-0034

7. [X] Yes [ ] No Inspection completed by Lead Agency during the reporting year.

If yes, attach a copy of the Surface Mining Inspection Report (MRRC-1). If inspection report is not attached, please explain on Page 4.

[X] N.C. 8A. SMARA Lead Agency (city OR county ONLY) ____________

[X] N.C. 8B. Reclamation Plan Status **CHECK ONE**

[ ] No Plan

[ ] Approved on ____________ (date). Attach copy with amendments, conditions, and **PROOF** of approval.

____________ Number of acres subject to Reclamation Plan

[ ] Pending. Submitted to Lead Agency on ____________ (date). **ATTACH PROOF OF SUBMITTAL**

[ ] On Appeal. Submitted to SMGB on ____________ (date). **ATTACH PROOF OF SUBMITTAL**

9. [X] Yes: Financial Assurances approved by Lead Agency. **ATTACH COPY AND PROOF OF APPROVAL**
Complete below for approved Financial Assurances:

Amount	Type	Date Posted	Date of Annual Review by Lead Agency	Expiration Date or Renewal Date (if applicable)
$47,256	LC	12/21/06	5/30/07	continuous

[ ] No: Financial Assurances NOT approved by Lead Agency.

[ ] Financial Assurances pending with Lead Agency. Submitted on ____________ (date) **ATTACH PROOF OF SUBMITTAL**

IF APPLICABLE, INFORMATION REQUIRED IN ITEMS 10 THROUGH 13 MUST BE PROVIDED FOR EACH SEPARATE PLOT

[X] N.C. 10. ATTACH NAMED U.S. GEOLOGICAL SURVEY MAP — 7.5' OR 15' QUAD — SHOWING BOUNDARIES OF MINING OPERATION

Latitude	Longitude	Section—Township—Range—Base Meridian	Quad Name	County

[X] N.C. 11. **Type** Code(s) of Mining Operation ____________ **SEE EXHIBIT A FOR TYPE CODES**

12. DISTURBED ACREAGE **COMPLETE ENTIRE SECTION**

1. 25 Approximate disturbed acreage at **beginning** of 2007. (This figure should match the figure from item 12, line 5 on your 2006 annual report. If it does not match, please explain on Page 4.)
2. 0 Approximate acreage disturbed **during** 2007.
3. 25 **(ADD LINE 1 TO LINE 2)**
4. 0 Approximate disturbed acreage **reclaimed** during 2007.
5. 25 **(SUBTRACT LINE 4 FROM LINE 3)** Approximate disturbed acreage **remaining** at end of 2007.

[X] N.C. 13. **CHECK ALL THAT APPLY**

[ ] Acres Permitted: ____________ & Permit # ____________

[ ] Acres Vested (Acres disturbed prior to January 1, 1976) : ____________

[ ] Acres on Federal Lands: ____________ & Permit/ID # ____________

[X] N.C. 14. $____________ Current total assessed value of mining operation as established by County Assessor's Office.

DISTRIBUTION: Original to State Copy to Lead Agency Copy to Operator

State of California
DEPARTMENT OF CONSERVATION
2007 MINING OPERATION ANNUAL REPORT
MRRC-2 Page 3

CA MINEID# 91- 54-0034

15. COMMODITIES AND PRODUCTION

SEE EXHIBIT B FOR COMMODITIES AND UNITS OF MEASURE

PRODUCTION INFORMATION IS PROPRIETARY AND WILL BE KEPT CONFIDENTIAL PURSUANT TO PUBLIC RESOURCE CODE SECTION 2207(g)

List All Commodities (from Exhibit B)	Category Number (from Exhibit B)	Check here if No Production for a Commodity	TOTAL PRODUCTION Amount of Production	CHECK ONE Tons	Troy Ounces	Pounds
A. PRIMARY COMMODITY PRODUCED BY OPERATION: Sand and Gravel	1		0	X		
B. ALL OTHER COMMODITIES PRODUCED BY OPERATION (include any production of gold and silver);						

16. FEES SCHEDULE

USING **BOTH** YOUR CATEGORY NUMBER **AND** TOTAL PRODUCTION FROM 15(A) ABOVE, REFER TO EXHIBIT C TO FIND YOUR CORRESPONDING PRODUCTION RANGE. ENTER YOUR CORRESPONDING PRODUCTION CODE IN 16(A) AND FEE IN 16(B) BELOW.

A. PRODUCTION CODE... **FROM EXHIBIT C** .... D

B. REPORTING FEE......... **FROM EXHIBIT C** .... $ 2,587.00

GOLD AND SILVER FEE:
IF GOLD OR SILVER PRODUCTION IS REPORTED IN SECTION 15(A) OR 15(B), CONTINUE ON TO COMPLETE 16(C) AND (D)

C. GOLD FEE (________ **Ounce(s) of gold) X ($5.00 per ounce) = $** 0.00

D. SILVER FEE (________ **Ounce(s) of silver) X ($0.10 per ounce) = $** 0.00

TOTAL FEES DUE: SUM OF 16(B), (C) AND (D) $ **2,587.00** **(ATTACH ONE CHECK FOR TOTAL)**

17. **SUBMITTED BY:**

Name (Please print) Ronald Wilson

Mailing Address 5180 Golden Foothill Pkwy., Suite 200

City/State/ZIP Code El Dorado Hills CA 95762 Telephone Number (916) 941-2852

I certify that the information submitted herein is complete and accurate (failure to submit complete and accurate requisite information may result in an administrative penalty as provided for in Public Resources Code Section 2774.1).

SIGNATURE OF SUBMITTER Ronald D Wilson **DATE** 6-16-08

TITLE OF SUBMITTER Manager, Land Use Permits

Received by
DEPARTMENT OF CONSERVATION
JUN 3 ... 08
Office of Mine Reclamation

Please mail annual report, reporting fee, gold and silver fee and ALL required attachments to:

DEPARTMENT OF CONSERVATION
Office of Mine Reclamation
801 K Street, MS 09-06
Sacramento, CA 95814-3529

DISTRIBUTION: Original to State Copy to Lead Agency Copy to Operator

CA MINEID# 91- ______________

DISTRIBUTION: Original to State Copy to Lead Agency Copy to Operator

Attachment D

RESOURCE MANAGEMENT AGENCY

5961 South Mooney Blvd
Visalia, CA. 93277
Phone (559) 624-7000
Fax (559) 730-2653

Michael Bond
Roger Hunt

Planning
Public Works
Administration

MICHAEL C. SPATA, DIRECTOR

By Email and Overnight Mail

October 13, 2014

Cemex Construction Materials Pacific, LLC
5180 Golden State Foothill Parkway
El Dorado Hills, CA 95762

Att: Ronald Wilson

Subject: Proposed Interim Management Plan Applicable to PMR No. 98-003 (Stillwell Mine)

Mr. Wilson:

On behalf of the Tulare County Resource Management Agency (RMA), this responds to the proposed Interim Management Plan (IMP) -- applicable to Surface Mining Permit (PMR) No. 98-003 -- submitted on August 15, 2014 on behalf of CMEX, the operator of the Stillwell Mine located at 24325 Lomita's Road, Lemon Cove, California.

As indicated below, there are a number of deficiencies for which the proposed IMP must be rejected. The grounds for rejection or incompleteness are identified as follows:

1. **Failure to Submit Application and Fees**

The proposed IMP was not submitted pursuant to RMA's application for an interim management plan, nor were the application fees of $1510.00 submitted in connection with the proposed IMP by the operator. Accordingly, RMA cannot conclude that the application is complete until a completed application and fees are submitted to RMA. Enclosed is a copy of the application.

2. **Evidence of Idleness Inadequately Submitted**

Pursuant to Public Resources Code Section 2770, subdivision (h)(1), "W*ithin 90 days of a surface mining operation becoming idle, as defined in Section 2727.1, the operator shall submit to the lead agency for review and approval, an interim management plan.*"

As indicated in Sections 3.1 and 3.2 of the proposed IMP, the operator claims that the Stillwell Quarry became "idle" as of May 17, 2013 using the definition contained in Public Resources Code Section 2727.1. Based upon this stated idle date, it appears that the 90-day period would have expired on August 15, 2013.

Pursuant to Public Resources Code Section 2770, subdivision (h)(6), "*Unless review of an interim management plan is pending before the lead agency, or an appeal is pending before the lead agency's governing body, a surface mining operation that remains idle for over one year after becoming idle as defined in Section 2727.1 without obtaining approval of an interim management plan shall be considered* *abandoned and the operator shall commence and complete reclamation in accordance with the approved reclamation plan."*

According to Public Resources Code Section 2727.1, the term " *'idle' means that an operator of a surface mining operation has curtailed production at the surface mining operation, with the intent to resume the surface mining operation at a future date, for a period of one year or more by more than 90 percent of its maximum annual mineral production within any of the last five years during which an interim management plan has not been approved."*

Applied here, the operator claims the mine became idle as of May 17, 2013 without submitting supporting data. The proposed IMP in Section 3.1 appears to only reference a 2006 annual production value and does not provide evidence of other annual production data. In addition, the year 2006 appears to be outside the period recognized in the criteria as defined in Public Resources Code Section 2727.1.

Therefore, assuming May 17, 2013 is the effective date the mine became idle, then evidence needs to be provided demonstrating that from the period from May 17, 2012 to May 17, 2013, the mine did not exceed 10% of the production for the five preceding annual periods. In support of the claim of idleness, the Mining Operation Annual Reports -- as apparently submitted by the operator to the California Department of Conservation for the years 2008, 2009, 2010, and 2012 -- should be provided with a completed application to RMA.

Nonetheless, RMA's peer review consultant obtained copies of Annual Reports for 2006 through 2013 apparently submitted by the operator of the mine to the Department of Conservation's Office of Mine Reclamation.

After reviewing these Annual Reports, it does not appear that the mine meets the criteria of producing 10% or less for one year or more, as required by Public Resources Code 2727.1, and as claimed by the operator in various sections of the proposed IMP.

For example, in Section 3.1 of the IMP, the operator states that "*In 2006, the production reported to the California Department of Conservation as part of the site's Mining Operations Annual Report was 849,000 tons. As of May 17, 2013, Stillwell Quarry will not exceed 10 percent of its reported production in 2006.*"

However, as shown in the table below, production in 2006 was only 9,584 tons and not 849,000 tons. Apparently, the highest production in the past five years occurred in 2010 and 2011 with 571,300 tons produced during these two years. To qualify as having production reduced to 10% or less, production for the last year would appear to have been 57,300 tons or less. According to the 2013 Annual Report, production was 152,687 tons, and thus, production during 2013 would not show a one year reduction necessary to qualify as "idle."

Report Year	Reported Production (tons)
2006	9,584
2007	0
2008	53,744
2009	256,400
2010	571,300
2011	571,300
2012	638
2013	152,687

Thus, after considering the above information, please respond with a completed application by providing the evidence necessary to support the claim of idleness.

3. Conditions of Approval Inadequately Addressed

Public Resources Code Section 2770, subdivision (h)(1), provides, in part, that "*the interim management plan shall provide measures the operator will implement to maintain the site in compliance with this chapter [Surface Mining Reclamation Act of 1975], including, but not limited to, all permit conditions.*"

After review of the proposed IMP, the conditions of approval associated with PMR 98-003 do not appear to be addressed adequately, particularly condition numbers 46 through 55, as having a primary relationship to the conditions of groundwater applicable to neighboring wells. The operator should take measures that are necessary to avoid causing groundwater impacts to the neighboring wells. Thus, in accordance with the above-stated code section, the operator shall identify measures to maintain the site in compliance with all permit conditions.

Additionally, in connection with PMR No. 98-003, financial assurances should address the reasonable costs to ensure that the water quality, recharge and storage of groundwater that is accessed by others is not diminished or impaired.

4. Conclusion

Based on the above discussion, the proposed IMP is deficient and the purported application is incomplete. Accordingly, pursuant to Public Resources Code Section 2770, subdivision (h)(4), please respond to this letter within 30 days by submitting a completed application (including the required fees) and by addressing the deficiencies described herein.

Sincerely,

Michael C. Spata

Michael C. Spata
Director

Enclosure

Patrick Mitchell, Mitchell Chadwick
Interested Parties
Tulare County Counsel

TULARE COUNTY RESOURCE MANAGEMENT AGENCY
APPLICATION
GENERAL INFORMATION / COVER SHEET

SURFACE MINING PERMITS AND/OR RECLAMATION

☐ Surface Mining Permit & Reclamation Plan
☐ Reclamation Plan
☐ Amendment to Surface Mining Permit & Reclamation Plan (No. _______)

General Information:

Applicant ____________________

Mailing Address ____________________ City ____________ State ___ Zip__________

Phone ______________ Cell Phone ____________ E-Mail ____________________

Property Owner *(if different)*____________________

Mailing Address ____________________ City ____________ State ___ Zip__________

Phone ______________ Cell Phone ____________ E-Mail ____________________

Agent *(if applicable)*____________________

Mailing Address ____________________ City ____________ State ___ Zip__________

Phone ______________ Cell Phone ____________ E-Mail ____________________

Site Address: ____________________

Physical Location of Site (cross streets & nearest community): ____________________

____

Assessor's Parcel No(s): ____________________

THIS SPACE FOR OFFICE USE ONLY

Application Received/Reviewed by: ______________ **Project Number(s)** ____________

Use Description ____________________

Current Zoning: ______________ **Economic Development Project:** ____________

Land Use Designation: ______________

Agricultural Preserve & Contract Nos. ***(if applicable)*** ____________________

Filing Fee(s): ______________ **Total Amount Paid:** ____________

Date Received: ______________ **Payment Type:** ____________

Receipt Number(s) ____________ **Existing Entitlements/References:**____________

COUNTY HOURS: Monday-Thursday 7:30 a.m. to 5:30 p.m. – Friday 8:00 A.M. TO 12:00 P.M.
PERMIT CENTER HOURS: MONDAY-THURSDAY 9:00 TO 4:30 P.M.

SURFACE MINING PERMITS AND/OR RECLAMATION PLAN

REQUIREMENTS, FEES AND INSTRUCTIONS *(Please use dark blue or black ink)*

1. The application must be filled out completely and in every respect with all questions answered and all requested information provided before the County can officially accept the application for processing. In the course of accepting and processing the application, the Permit Center Official or the Project Planner may request the applicant to clarify, amplify, correct or otherwise supplement the required information. The application may be filed with the Tulare County Resource Management Agency, Permit Center, located at 5961 South Mooney Blvd, Visalia, CA 93277-9394. The phone number is (559) 624-7100.

2. Section 7-25-1105 of the Ordinance Code of Tulare County requires a filing fee to be paid at the time of filing an applicant for Surface Mining Permits/Reclamation Plan. This fee is to cover the cost to the County for advertising, investigations and processing the application through its various stages. If the costs of preparing the written staff report and environmental review exceed the deposit paid, the applicant will be billed an additional $100/hour for staff time. A public hearing will not be scheduled until payment is received. The following fees apply, depending on the type of use applied for:

Description of Permit	FEE AMOUNT (SUBJECT TO CHANGE AT ANY TIME)
Surface Mining Permit/Reclamation Plan (Planning Commission)	$3,441.00 deposit plus $100/hr.
Surface Mining Permit/Reclamation Plan exempt from CEQA	$2,567.00 deposit plus $100/hr.
Amendment to Surface Mining Permit/Reclamation Plan	$2,457.00 deposit plus $100/hr.
Minor Modification to Surface Mining Permit/Reclamation Plan	$525.00
Request for approval of Financial Assurance	$135.00
Inspection for release of Financial Assurances	$350.00 deposit plus $100/hr.
Interim Management Plan	$1,510.00 deposit plus $100/hr.
Additional Fees Due Prior to Public Hearing *(if applicable)*	
Compliance Monitoring Fee (3 inspections at $65.00)	$195.00 deposit
State Fish & Game fee for Environmental Impact Report	$2,995.25
State Fish & Game fee for Negative Declaration or Mitigated ND	$2,156.25
County Clerk Filing Fee for Notice of Determination	$58.00
Recording Fee	$75.00
Annual Inspection Fee	$400.00
Additional Charge for Staff Time	To Be Determined

IMPORTANT NOTICE: The applicant is responsible for the payment of all fees associated with this application, including the initial deposit and additional fees charged for processing. In addition, the applicant may be required to submit to the County additional deposits. All fees charged for this application are required to be paid to the County prior to approval of the proposal.

3. This application must be filled out with full and complete answers and must be signed by at least one of the property owners.
4. At least 10 copies of the site plan and an aerial photo shall be submitted so that a complete evaluation may be made of the application by the appropriate agencies, as required. Additional copies of the site plans may be required. The site plan shall include the following:
   a. Boundaries and topographic details of the site
   b. Location of all streams, surface water bodies, roads, railroads, water wells and utility facilities within 500 feet of the site
   c. Location of all currently proposed access roads to be constructed in conducting the surface mining operations(s) and proposed surface dust treatment
   d. Location of areas [to be] mined, and of waste dumps and tailing ponds
   e. All existing and proposed processing and stockpile areas
   f. Typical cross sections of the extent and configuration of slopes to be maintained in excavated areas
   g. Provisions for the conservation and protection of groundwater, the disposition of surface drainage and erosion control

h. By use of overlay symbol or color, depiction of separate mining phases, if applicable

i. The source of map base, north point, and scale

5. In the case of large integrated operations, with several separate mines or pits, it will be to the advantage of the applicant to answer all items in sufficient detail not only for clarifying the nature of his operation, but also for protecting any vested rights under the provisions of the Act. The principal map should be of a scale sufficient to show the required details clearly. For a large operation, a smaller-scale, overall map with large-scale detail maps of the critical areas may be more practical. In long-range operations, precision of detail is not as important as a clear exposition of the operation. The use of colored symbols or map overlays is recommended to simplify the map preparation. Aerial photographs may be substituted for maps where they adequately indicate the required information.

6. The attached "Indemnification Agreement" must be signed by the applicant and submitted with the completed application.

7. Operational Statement: Please attach a detailed operational statement.

SUMMARY OF REQUIREMENTS FOR A SURFACE MINING OR RECLAMATION PLAN APPLICATION

		Application	Staff
1.	Completed Application	☐	☐
2.	Owner's Affidavit*(signed by property owner)*	☐	☐
3.	Filing Fee	☐	☐
4.	Minimum of 10 copies of the site plan of the mined land *(additional copies may be required)*	☐	☐
5.	Indemnification and Cost Recovery Agreement *(separate attachment)*	☐	☐
6.	Supplemental Information – Review of "Identified Hazardous Waste Sites" List	☐	☐
7.	Applicant's Request for Notification of Proposed Land Use Action	☐	☐
8.	Operational Statement *(if required by County)*	☐	☐
9.	Copy of the Assessor's Map, deeds, contract of sale, or other legal description.	☐	☐
10.	10 copies of plans indicating method, sequence and timing for reclamation	☐	☐
11.	Notarized statement of acknowledgement that all owners of a possessory interest in the land to be mined have been notified of the proposed mining operations	☐	☐
12.	10 copies of a Location and Vicinity Map *It is suggested that this map be shown on a USGS 7-1/2 minute topographic quadrangle sheet (Scale: 1: -2000") unless larger scale maps are available. If these are not available, or if the operation is extensive, 15 minute sheets (Scale 1' - 1 mile) may be used. Contours, roads, drainage, adjacent towns, etc., should be shown, as well as the site of the operation.*	☐	☐
13.	Request for Unused Fees Form (Signed by Applicant)	☐	☐

Note: Information on SMARA can be found online at the Department of Conservation-Office of Mine Reclamation website (http://www.consrv.ca.gov/OMR/index.htm). Additional link: on the Mineral Resources page of the County RMA website (http://www.co.tulare.ca.us/government/rma/countywide/mineral.asp)

PLEASE FILL OUT THE FOLLOWING INFORMATION COMPLETELY

1. The applicant requests approval of a (check box):

☐ Surface Mining Permit and Reclamation Plan

☐ Reclamation Plan

☐ Amendment to an existing Surface Mining Permit and or Reclamation Plan

State exactly what is to be done on, or with the property (add additional sheets if necessary): ______

____

____

____

____

2. Name of Mineral Property, if applicable: ______________________________

3. Property owner(s), or owner(s) of surface rights (use additional sheets if necessary).

Property Owner(s): ______________________ Phone: ______________

Mailing Address: ____

City: __________________ State: ______ Zip: ________

Owner(s) of mineral rights - *List, if separate from surface owner. If a mining claim, indicate the owner(s) of the possessory rights (claim owner). (Use additional sheets if necessary.)*

Name(s): ______________________ Phone: ______________

Mailing Address: ____

City: __________________ State: ______ Zip: ________

Lessee(s)

Name(s): ______________________ Phone: ______________

Mailing Address: ____

City: __________________ State: ______ Zip: ________

Operator(s) *List as individual, partnership, corporation, etc. If a joint venture, also show name of managing person or concern.*

Name(s): ______________________ Phone: ______________

Mailing Address: ____

City: __________________ State: ______ Zip: ________

Agent of process

Name: ______________________ Phone: ______________

Mailing Address: ____

City: __________________ State: ______ Zip: ________

Where applicable, indicate "Same as applicant." If the actual reclamation is to be conducted by a "person" other than the applicant or operator, indicate the name and address of said person(s).

If more than one owner, enter name and address of each on a separate page. If more than one parcel is included in the operation, enter the owners of each parcel. If the surface and mineral rights are separated, show the owners of surface rights under this item. On Federal land, enter U.S.A. as owner, with administering agency; e.g., USFS, BLM, NPS, etc.

4. How much area of the total parcel or lot is being utilized for the proposed use: ______________

5. Present use of the project site: ______________________________

6. Mineral commodity [to be] mined: ______________________________

7. Geologic description, including brief general geologic setting, more detailed description of the mineral deposit [to be] mined, and principal minerals or rock types present: ______________

____

____

A brief and concise answer is required. Include only essential data on geologic formations, structures, rocks and minerals, and nature of the mineral deposit.

8. Proposed starting date of operation: ______

   If the surface mine was already in operation on January 1, 1976, or the operation was conducted prior to that date, so state.

9. Estimated life of operation: ______

10. Duration of first subsequent phases: ______

11. Employees: Indicate the total number of employees and include the number of shifts and number of employees per shift:

    ______

12. Hours/Days of Operation

    ☐ Continuous ☐ Seasonal ☐ Intermittent *(if seasonal, include months of operation)*:

    ______

    ☐ Developed, not yet in operation ☐ Temporarily deactivated ☐ Stockpile in mine

13. Type of equipment and/or machines to be utilized: ______

    ______

14. Typical size and carrying capacity of trucks to be used: ______

    ______

15. Operation will be (check appropriate box):

    ☐ Under 5,000 tons <u>or</u> cubic yards per year

    ☐ 5,000 – 50,000 tons <u>or</u> cubic yards per year

    ☐ 50,000 – 250,000 tons <u>or</u> cubic yards per year

    ☐ 250,000 – 1,000,000 tons <u>or</u> cubic yards per year

    ☐ Over 1,000,000 tons <u>or</u> cubic yards per year

16. Total anticipated production will be (check appropriate box):

    ☐ Mineral commodities to be removed ______ tons <u>or</u> ______ cu. yds.

    ☐ Waste or overburden retained on site ______ tons <u>or</u> ______ cu. yds.

    ☐ Waste or overburden disposed off-site ______ tons <u>or</u> ______ cu. yds.

    ☐ Maximum anticipated depth ______ feet.

    If more than one individual pit or quarry is included in the plan, answer these items for each operation. Note that either tons, or cubic yards (in-place) are requested. The unit not used should be crossed out. Include all ore, mineral, overburden and waste as one total quantity. Attach an additional sheet, if necessary.

17. Mining method *(check all that apply)*.

    ☐ Open Pit ☐ Gravel/Sand Pit

    ☐ Single Bench ☐ Drill and Blast

    Quarry:

    ☐ Hill Top ☐ Clay Pit

☐	Multi-bench	☐	Truck to Processing Plant (to RR)
☐	Side Hill	☐	Borrow Pit
☐	Drag Line	☐	Tailings Pond
☐	Low Level	☐	Slurry Pump
☐	Shovel	☐	Waste Dump
☐	Gravel Bar	☐	Underground
☐	Rail	☐	Skimming
☐	In-stream	☐	Other________________________

18. Operating practices proposed to minimize noise, vibration and dust: ______________________

____

____

19. Methods to prevent pollution of surface or underground water: ______________________

____

____

20. If processing of the ores or minerals mined is planned to be conducted at or adjacent to the site, describe the nature of the processing and explain disposal method of the tailings or waste from processing:

____

____

21. Estimate quantity *(gallons per day)* and quality of water required by the proposed operation. Specify proposed sources of the water, method of its conveyance to the property and the quantity and method of disposal for used and/or surplus water:

____

____

22. If the nature of the deposit and the mining method used will permit, describe and show the steps or phases of the mining operation that allow concurrent reclamation, and include a proposed time schedule for such concurrent activities (*If essentially no reclamation may be accomplished during first phase, so indicate and explain):*

____

____

23. If the mining operation was in existence prior to January 1, 1976, indicate on an overlay map (or by color or symbol) those areas mined since January 1, 1976, which are to be covered by the reclamation plan.

Acreage: ____

24. Describe the ultimate physical condition of the site and specify proposed use(s), or potential uses, of the mined lands as reclaimed:

____

____

25. Describe the relationship of the interim uses other than mining and the ultimate physical condition to:

a. Zoning regulations ______________________________

____

b. General Plan elements ______________________________

____

26. Describe soil conditions and a proposed soil salvage plan: ______________________________

____

If proposed for refill, identify the type of refill material and probable sources: ______________________________

____

27. Describe on separate pages the method, sequence and timing proposed to bring the reclamation of the land to its end state. Indicate on the map or diagram the following information:

a. Backfilling and grading
b. Stabilization of slopes
c. Stabilization of permanent waste dumps, tailing, etc.
d. Rehabilitation of pre-mining drainage
e. Removal, disposal or utilization of residual equipment, structures, refuse, etc.
f. Water features and methods planned to overcome stagnation
g. Control of contaminants, especially with regard to surface runoff and ground water
h. Treatment of streambeds and stream banks to control erosion and sedimentation
i. Removal or minimization of residual hazards
j. Re-soiling, re-vegetation with evidence that selected plants can survive given the site's topography, soil and climate
k. Landscaping plan and planting schedule designed to protect natural vegetation and to restore the appearance of the property
l. Approximate final contouring
m. The final disposition of structures

28. If a short term phasing of the reclamation has been determined, describe in detail the specific reclamation to be accomplished during the first phase: ______________________________

____

Describe how the reclamation of the site in this manner may affect future mining at this site and in the surrounding area.

____

____

ENVIRONMENTAL SETTING

29. Describe the project site, prior to the proposed use, including all above and below ground developed improvements *(residences, outbuildings, barns, sheds, covers, shop buildings, septic tank-leach line systems, domestic/agricultural wells, fuel storage tanks, etc.)*, including the size of each.

____

____

30. Describe the slopes (% and direction) and general terrain of the subject site: ____________________

____

31. Trees: identify the type and size of any large trees on site. ____________________

____

32. Water courses: identify the type and location of any on-site or nearby water courses *(rivers, canals, ditches, streams, creeks, natural drainage channels, etc.).*

____

33. Describe the character and land use of the surrounding properties (orchards, vineyards, row crops, pasture, open space, water courses, railroads, roads, rural residential, subdivisions, commercial, schools, churches, vacant, city or county boundary):

DIRECTION	CHARACTER/LAND USE
North	
South	
East	
West	

34. Liquid waste disposal *(please check appropriate box)*: ☐ Existing ☐ Proposed

☐ Septic Tank-Leach Lines: Size of tank ________gallons & length of lines __________ft.

☐ Seepage Pit - Size____________________

☐ Community System – Name:____________________

☐ Aerobic tank - Size of tank ____________________

35. Water supply *(please check appropriate box)*: ☐ Existing ☐ Proposed

☐ Domestic Well – Size of pump______________ Gallons per minute ______________

☐ Irrigation Well: ____________________

☐ Irrigation District – Name: ____________________

☐ Private Water Company – Name: ____________________

☐ Community System – Name: ____________________

__Note__: A "Will Serve" letter must be provided from any off-site community water and/or sewage disposal provider and must be submitted as part of this application. In addition, water availability information for all existing and/or proposed on-site domestic wells __must__ also be submitted with this application.

36. Source of energy *(please check appropriate box)*:

☐ Electricity – Company name: ____________________

☐ Natural Gas – Company name: ____________________

☐ Propane: Size of tank ______________ Provider ____________________

37. Will the project require the development of public service *facilities (roads, sewer lines, water lines, etc.)?* If so, describe the required development:

____

____

SUPPLEMENTAL INFORMATION FOR APPLICATION OF ANY DEVELOPMENT PROJECT

HAZARDOUS WASTE AND SUBSTANCES STATEMENT:

Per California Government Code Section 65962.5(f), before the County accepts as complete an application for any development project, the applicant or owner shall consult the State's lists of hazardous waste facilities, shall submit a signed statement to the County indicating whether the project is located on a site that is included on any of the lists. The "Identified Hazardous Waste Sites" list may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public or reviewed at the Resource Management Agency Permit Center, 5961 South Mooney Blvd., Visalia, California.

Before any application can be accepted as complete by the Tulare County Resource Management Agency, the owner of the subject property, or the owner's authorized agent, must complete this form.

STATEMENT:

I have reviewed the "Identified Hazardous Waste Sites" list (which may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public) dated ____________________, 20____, and state that:

> "The site(s) of the project subject to this application ___ is / ___ is not on the "Identified Hazardous Waste Sites" list."

(If the site is on any of hazardous waste facilities lists, the applicant shall inform the County of which list, the date of the list, the regulatory identification number of the site on the list and corrective measures that will be taken to remove the site from the State list.)

CERTIFICATION:

I hereby certify that the information furnished herein presents to the best of my knowledge and belief, true and correct facts, statements, and information, and that I am the owner, or the authorized agent of the owner, of the subject property.

Signed: ______________________________ Dated: ________________

OWNER'S AFFIDAVIT

(Must be signed by property owner)

STATE OF CALIFORNIA) SS.
COUNTY OF TULARE)

I, (We,) the undersigned, say:

I (We) own property involved in this application and I (we) have completed this application and other documents and maps required hereby to the best of my (our) ability and the statements and information above referred to are, in all respects, true and correct to the best of my (our) knowledge and belief. I (We) declare under penalty of perjury that the foregoing is true and correct.

Executed on ____________________, 20___, at ____

Name: __________________________ Signature: ________________________________

Address: ____ State: _______ Zip: ________

Optional – additional property owner

Name: __________________________ Signature: ________________________________

Address: ____ State: _______ Zip: ________

If there is an agent, title company, or prospective buyer who desires notification of the action taken on this application, please enter name here.

Name: ____

Relationship: ____

Address: ____

State: ______________ Zip: _________

Telephone: ____

FAX No.: ____

In the case of applications which are subject to the authority of the Zoning Administrator, (see list of projects), the Zoning Ordinance provides that the applicant has the right to request that the Planning Commission hear the application rather than the Zoning Administrator. Please sign below if you wish to have your application heard by the Planning Commission. Note: An additional fee is required for the Planning Commission process.

Signed: ______________________________________ Date: ____________________

APPLICANTS' REQUEST FOR NOTIFICATION OF PROPOSED LAND USE ACTION

NOTICE:

Under Section 65945(a) of the California Government Code, at the time of filing an application for a development permit, the applicant may make a written request to receive notice from the County of a proposal to adopt or amend any of the following plans or ordinances which may affect the proposed development permit:

1. A General Plan
2. A Specific Plan
3. A Zoning Ordinance
4. An Ordinance affecting building permits or grading permits

The applicant shall specify, in written request, the types of proposed actions for which notice is requested. Prior to taking any of those actions, the County is required to give notice to any applicant who has requested notice of the type of action proposed and whose develop0ment project is pending before the County if the County determines that the proposal is reasonably related to the applicant's request for the development permit. Notice shall be given only for those types of actions which the applicant specifies in the request for notification.

REQUEST:

[ ] I hereby request under Section 65945(a) for the following types of actions (see above). Circle those that apply:

1 2 3 4

[ ] I hereby waive notice under Section 65945(a).

I understand that any rights to notice under Section 65945(a) will lapse at the time that final action is taken on my development project.

Signed: ______________________________ Dated: ________________
(applicant or authorized agent)

Permit No.: ____________________________

ADDITIONAL INFORMATION REGARDING SURFACE MINING AND RECLAMATION PLAN REQUIREMENTS

TULARE COUNTY RESOURCE MANAGEMENT AGENCY

EXEMPTIONS

The State Surface Mining and Reclamation Act of 1975 (SMARA) provides that the Act does not apply to any of the following activities (reference Section 2714, Public Resources Code):

1. Excavations or grading conducted for farming or on-site construction or for the purpose of restoring land following a floor or natural disaster.
2. Prospecting for, or the extraction of minerals for commercial purposes, and the removal of overburden in total amounts of less than 1,000 cubic yards in any one location of one acre or less.
3. Surface mining operations that are required by federal law in order to protect a mining claim, if such operations are conducted solely for that purpose.
4. Such other surface mining operations which the State Mining and Geology Board determines to be of an infrequent nature and which involve only minor surface disturbances.

Additional exemptions established by the State Guidelines (Section 3506, Title 14, California Administrative Code):

1. Prospecting and exploration for minerals of commercial value where less than 1,000 cubic yards of overburden is removed in any one location of one acre or less.

   Such activities that consist of geological, geochemical and geophysical mapping; hand surface sampling of outcrops and soil; and core or other test drilling that do not involve extensive, de-vegetation or other significant environmental impact, would normally be considered exempt from the provisions of the Act.

2. Any surface mining operation that does not involve either the removal of a total of more than 1,000 cubic yards of minerals, ores, and overburden, or involve more than one acre in any one location.

ZONING COMPLIANCE

The above described uses and activities are exempt from any requirement to secure approval of a surface mining permit and/or reclamation plan; however, this does not excuse such uses from complying with all applicable zoning requirements. Some of these uses may, for example, require the approval of a Special Use Permit if such a permit is required under the Zoning Ordinance. In addition, some of the uses may be excluded from particular zones.

A more important zoning consideration is that all surface mining permits must comply with the zoning regulations applicable to the property. The Tulare County Zoning Ordinance presently permits the following described surface mining uses in only the following zones:

TYPE OF USE	ZONES ALLOWED
Borrow Pit	AE, AE-10, AE-20, AE-40, AE-80, AE-1, R-A, O, M-1, M-2, PD-F, AP, AF
Excavation and removal of rock, sand, gravel and other materials	F-1
Mining or extraction of metal, minerals, oils, gas, or hydrocarbons, together with necessary buildings, apparatus, and appurtenances incidental thereto	AE, AE-10, AE-20, AE-40, AE-80, A-1, R-A, R-0, R-1, R-2, R-3, O, P-O, P-1, C-1, C-2, M-1, M-2, PD-F, AF, AP
Mineral and hydrocarbon discovery and mining, but not including processing.	TPZ
Potash works	A-1, AE-40, AE-80, M-2, AF
Quarry and stone mill	A-1, AE-40, AE-80, M-2, AF

The above described uses are permitted only in the identified zones, and most require the issuance of a Special Use Permit under the Zoning Ordinance. However, the Zoning Ordinance provides "that no Use Permit shall be required if a surface mining permit and/or reclamation plan is required under the provisions of Section 7-25-1000 et seq. of the Ordinance Code of Tulare County". This means that the Special Use Permit requirements under the Zoning Ordinance are satisfied if compliance under SMARA is required. Remember, however, a Special Use Permit may still be required even if the use is exempted from SMARA as described above. The applicant should consult with the Resource Management Agency, Planning Division to determine whether or not a Special Use Permit will be required in such cases.

Processing of Mined Materials

It should be emphasized that approval of a surface mining permit only constitutes an approval or entitlement for use of a surface mining operation. It does not include any approval of processing facilities for the mined materials. If such processing facilities are proposed on the same site, or in conjunction with the surface mining operation, additional permits or approvals may be required under the Zoning Ordinance. Applicants are again encouraged to consult with the Planning staff to determine what additional permits or approvals are necessary before filing the mining permit application.

Definitions

The following definitions were extracted from the SMARA and the State Guidelines *(not a complete list)*.

"Mined land" includes the surface, subsurface, and ground water of an area in which surface mining operations will be, are being, or have been conducted, including private ways and roads appurtenant to any such area, land excavations, workings, mining waste and areas in which structures, facilities, equipment, machines, tools or other materials or property which result from, or are used in, surface mining operations are located.

"Operator" means any person who is engaged in surface mining operations, himself, or who contracts with others to conduct operations on his behalf, except a person who is engaged in surface mining operations as an employee with wages as his sole compensation.

"Reclamation" means the combined process of land treatment that minimizes water degradation, air pollution, damage to aquatic or wildlife habitat, flooding, erosion, and other adverse effects from surface mining operations, including adverse surface effects incidental to underground mines, so that mined land uses and create no danger to public health or safety. The process may extend to affected lands surrounding mined lands, and may require backfilling, grading, re-soiling, re-vegetation, soil compaction, stabilization, or other measures.

"Reclamation Plan" means the applicant's (operator's) completed and approved plan for reclaiming the lands affected by his surface mining operations conducted after January 1, 1976 (Reference Section 2772 of SMARA).

"Surface Mining Operations" means all, or any part of, the process involved in the mining of minerals on mined lands by removing overburden and mining directly from the mineral deposits, open-pit mining of minerals naturally exposed, mining by the auger method, dredging and quarrying, or surface work incident to an underground mine. Surface mining operations shall include, but are not limited to:

(a) In place distillation or retorting or leaching.
(b) The production and disposal of mining waste.
(c) Prospecting and exploratory activities.

"Minerals" means any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances, including, but limited to, coal, peat, and bituminous rock, but excluding geothermal resources, natural gas and petroleum.

APPLICATION PROCESS

The following is a summary of the various Tulare County deadlines and processing requirements for surface mining permits and/or reclamation plan applications:

1. Not less than 30 days after filing out the application, the County Planning and Development Department must determine whether the application is complete and inform the applicant of the determination. In the event the application is found to be incomplete, the Department will specify those parts of the application, which are incomplete and indicate the manner in which they can be made complete.

2. If the application qualifies for a Negative Declaration under the California Environmental Quality Act (CEQA), the applicant will be informed and the application will be set for public hearing. A hearing will be scheduled before the Planning Commission not more than 90 days after the acceptance of the application as complete. The hearing may be continued from time to time.

3. If the application requires the preparation of an Environmental Impact Report (EIR) under the CEQA, the applicant will be informed and requested to authorize the preparation of the EIR if authorization was not previously given. The Department is not permitted to initiate work on the EIR until the applicant agrees to the preparation of the EIR. (Note: The applicant has the right to appeal the decision to prepare an EIR to the Board of Supervisors within 5 days). Once the applicant agrees to the preparation of the EIR, the EIR is completed and the fees have been paid, the Department is free to set the matter for hearing. A hearing will be scheduled before the Planning Commission not more than 30 days after completion of the Final EIR. The hearing may be continued from time to time.

4. Notice of the Planning Commission hearing is given at least 10 days prior to the hearing. Both the applicant and the owners of all property within 300' of the site will be given mailed notice of the hearing.

5. After the hearing, the Planning Commission may approve, conditionally approve or deny the proposal.

6. The applicant will be mailed a copy of the Planning Commission's decision within 10 days after the date the decision is made.

7. Any person adversely affected by the decision of the Planning Commission's decision to the Tulare County Board of Supervisors. The appeal must be in writing and filed with the Clerk of the Board of Supervisors within 10 days after the date the decision is made.

8. If no appeal is filed, the Planning Commission's decision is final 10 days after the date the decision is made.

9. If an appeal is filed, 10 days notice of the appeal hearing before the Board of Supervisors will be given to the applicant, the applicant, and all persons who requested a copy of the Planning Commission's decision and to all owners of property within 300'.

10. After the hearing, the Board of Supervisors may affirm, revoke, or modify the Planning Commission's decision, or refer the matter back to the Planning Commission.

11. An additional appeal for certain types of projects may be filed with the State Mining and Geology Board, within 15 days of exhausting all appeal rights with the Board of Supervisors.

The County of Tulare

"INDEMNIFICATION AND COST RECOVERY AGREEMENT"

(must accompany this application)

Please download or print out the form from the County Web Site (located with the list of land use applications).

The Indemnification and Cost Recovery Agreement must be filled in and signed by the applicant and must be submitted as part of any land use application requiring discretionary review by the County.

This Agreement must be signed by the Applicant

Please sign the Agreement in blue ink (preferred) and submit the original, signed document with the appropriate land use application.

WITHDRAWAL OF APPLICATION

Should you, at any time during the processing of your application, wish to withdraw your application and request a refund of fees paid, you may do so by forwarding a letter to the Resource Management Agency making that request. Please state clearly that you no longer wish to proceed with your land use project *(state the project number)*, and that you are requesting a withdrawal of your project and a refund of any fees that have not been expended for the processing of your application.

Please date and sign the letter and include a mailing address where you would like any refund of fees (if applicable) to be mailed. Forward the request to the attention of the project planner.

REQUEST FOR REFUND OF FEES

Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

Project Number: ________________________

Please refund any unused fees associated with this application to the designated name and address below.

____
(please print name)

____
(Street Address, Suite/Apt. No.)

____
(City, State, Zip)

____ ________________
Signature Date

Attachment E

KENNETH D. SCHMIDT AND ASSOCIATES
GROUNDWATER QUALITY CONSULTANTS
600 WEST SHAW, SUITE 250
FRESNO, CALIFORNIA 93704
TELEPHONE (559) 224-4412

September 29, 2014

Mr. Michael C. Spata
Associate Director
Resource Management Agency
5961 South Mooney Blvd
Visalia, CA 93277

Re: Peer Review Report and Addendums
CEMEX Stillwell Quarry

Dear Mr. Spata:

I am providing comments on the peer review report on behalf of Rob Morton, Elias Rodriquez, Orville Cloud, George Clausen, Frank Callahan, Martin Rodriquez, and Tom Cairns, local residents and well owners. I have reviewed the peer review report of August 25, 2014 by Tully & Young, the report by EMKO Environmental, Inc. of February 26, 2014 (the focus of the peer review report), and the addendums of August 25, 2014 by EMKO Environmental, Inc. and Tully and Young. Following are my comments:

Schmidt 1

Overall, I agree with the thrust of the Tully & Young report, as stated on Page 16, except for the comment that "It is possible that the Report's conclusions are completely correct". This brief summary does not fully encapsulate a number of problems pointed out in the peer review report, when it is read in detail. Following is a discussion of some of the primary issues.

Water-level Elevations

Elevations of water in the excavation are absolutely necessary to understand groundwater flows, and these were not provided. First, when the excavation was being dewatered, groundwater should have been flowing to the excavation. That is, the water level in the excavation should have been deeper than around the excavation. Also, when the recharge trench was operating, groundwater should have been locally moving away from the trench in both directions. Neither of these trends was indicated on five of the water-level elevation maps presented in the addendum, when both processes were reportedly occurring. For example, the map for March 2008 shows a number of water-level elevation contours (453 to 486 feet above mean sea level) perpendicular to the excavation. The problem with this is that the water surface in the

Schmidt 2

excavation, which is connected to the groundwater, had to be level. Thus the contours cannot be perpendicular to the excavation. The problem was not addressed in the peer review report. Also, a pre-project water-level elevation map was not provided, which is a serious deficiency. Interpretation of the water-level maps was not provided in the addendums. Of particular interest is the apparent groundwater flow toward the northwest in April 2012 and April 2014. Also, there appears to be a much flatter gradient between the Cairns Well and MW-3, than farther to the southwest, which should be explained.

Factors Influencing Water Levels

Schmidt 3

Besides flows in the Kaweah River, which are discussed in the EMKO report, periods of irrigation deliveries to the irrigated lands southeast of the excavation shown have been provided. Although the major ditches in the area are apparently lined, deep percolation from irrigation should be a significant source of recharge. Also pumping from any active irrigation wells in this area should be evaluated.

Lake Leveling Influence

Schmidt 4

Lake leveling was not mentioned in the peer review report, but this tends to raise the water level to the west or southwest and lower it to the east or northeast of the excavation.

Lake Evaporation

Schmidt 5

Also the excavation dewatering ceased, the influence of lake evaporation would continue. This was not addressed in the peer review report, and this needs to be factored into the evaluation. For example, under this condition, groundwater could locally flow toward the excavation from all directions.

Interpretation

Schmidt 6

Preparing several profiles, comparable to Figures 3-4 and 3-25 of the Final EIR, would be very useful. Two would be prepared extending from the northwest to southeast. One would extend through the excavation, the other would be between the excavation and Highway 216. Another would extend from the southwest to northeast near the recharge trench and nearby private wells. The land surface, base of the alluvial deposits, depths of wells, shape of the excavation at various times, and the historical water-level data would be shown. This would provide much more context than water-level hydrographs and water-level elevation maps alone.

KENNETH D. SCHMIDT AND ASSOCIATES
GROUNDWATER QUALITY CONSULTANTS

Sincerely yours,

Kenneth D. Schmidt

KDS/cl

Appendix B:

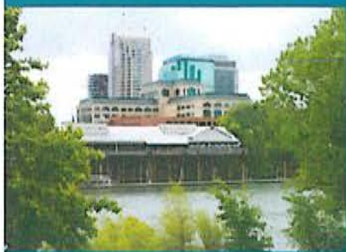
Part 1: August 25, 2014 *Peer Review Memorandum* from Tully & Young to Tulare County RMA, and attachments

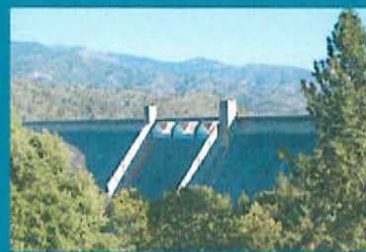
Part 2: August 25, 2014 *Addendum to Peer Review Memorandum* from Tully & Young to County RMA, and attachments

Part 1: August 25, 2014 *Peer Review Memorandum* from Tully & Young to Tulare County RMA, and attachments

Tully & Young
Comprehensive Water Planning

Tully & Young, Inc.
3600 American River Drive, Suite 260
Sacramento, CA 95864






August 25, 2014

Peer Review of *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*

(prepared by EMKO, February 26, 2014)

Prepared for:
County of Tulare
Resource Management Agency

Synthesizing Hydrology,
Engineering, Law & Policy

August 2014

Prepared by:

Tully & Young
Comprehensive Water Planning

REGISTERED PROFESSIONAL ENGINEER
GREGORY E. YOUNG
No. C051255
Exp. 9/30/15
CIVIL
STATE OF CALIFORNIA

Table of Contents

Tully & Young
Comprehensive Water Planning

Tully & Young, Inc.
3600 American River Drive, Suite 260
Sacramento, CA 95864

MEMORANDUM

To:	Mike Spata, Associate Director Tulare County Resource Management Agency
From:	Greg Young, P.E.
Date:	August 25, 2014
Subject:	Findings and conclusions of peer review of *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*, prepared by EMKO dated February 26, 2014

The purposes of this memorandum are to (1) evaluate the findings from the peer review of the *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*, prepared by EMKO dated February 26, 2014 ("Report"), and (2) present conclusions of the peer review. A copy of the Report is included as **Attachment 1**.

Background

Tully & Young, Inc., an experienced water resource planning firm in Sacramento, was contracted by the Tulare County Resource Management Agency ("County") to perform a peer review of Report in response to on-going concerns regarding localized groundwater elevation conditions. Company qualifications and Greg Young's resume are included as **Attachment 2**.

The Report was originally prepared at the request of the County "*to address several written complaints received by RMA in late January 2014 regarding groundwater conditions adjacent to the CEMEX Construction Materials, Inc. (CEMEX) Stillwell Quarry...*" (Report, p. 3). At that time, residents of properties adjacent to the Stillwell Quarry ("Quarry") were experiencing lowering of the groundwater in shallow domestic wells and believed the Quarry was responsible. The Report concluded that "[T]*he available data and documentation demonstrate that the concerns identified in the letters received in late January 2014 are not caused by mining activities.*"

Because groundwater conditions have continued to be of concern on adjacent properties, the Report's conclusion has been questioned and challenged by the same local residents, and has been brought to attention of the County Board of Supervisors (see transcript from July 8, 2014 Board of Supervisors meeting). The County has requested Tully & Young review the Report in light of these challenges as it continues to work to resolve the circumstances being experienced by the local residents.

The review's focus was not limited to the materials and conclusions of the Report. To understand the underlying context as well as data and analysis in the Report, independent research of other data, reports, and materials relevant to the Quarry was undertaken, and discussions were had with County. This independent research and review of other materials, as well as communications with the County, helped place the Report's information and conclusions in context to enable an appropriate peer review. For instance, as discussed later in this memorandum, this review included the original EIR and supporting technical documents, relevant hydrologic and reservoir data, and historic satellite images.

In addition to the aforementioned review and research, the lead author of the Report, Dr. Andrew Kopania, was engaged by CEMEX to prepare additional materials as an addendum to the Report ("August Addendum"). These materials were summarized and provided to the County in a memorandum (see **Attachment 3**) and accompanying data in an email to the County dated August 12, 2014 (also included with **Attachment 3**). Though this memorandum and data was provided after a thorough review of the Report was already completed, it is relevant to the peer review effort and therefore incorporated and referenced herein as appropriate.

Governing Permit Conditions

As a starting point, the Conditions of Approval ("Conditions") for the Quarry, as adopted in 2002 by the County Board of Supervisors, were reviewed to understand the requirements placed upon the operator of the Quarry, CEMEX Construction Materials, Inc. ("CEMEX"). Conditions 46 through 55 were identified as having a primary relationship to the conditions of groundwater in neighboring wells (see **Attachment 4**)

During review of the Report and associated research it became apparent that many monitoring reports and associated analyses, as required by the Conditions, were never prepared or provided to the County. For instance, Condition 48 clearly states that an annual groundwater monitoring report shall be prepared, as required by the Groundwater Monitoring Plan ("Monitoring Plan"). Such reports do not appear to exist. As a further example, the Monitoring Plan states that the Quarry operator shall provide the County with reports that "*will also include groundwater contour maps showing the location of each monitoring well and the current direction of groundwater flow and hydraulic gradient calculated for each monitoring event.*" (Monitoring Plan, p. 3). Lacking this information, several questions cannot yet be fully addressed and thus the key finding of the Report is limited.

The August Addendum did provide some additional data and analysis regarding the requirements of Condition 48, namely, providing estimates of historic monthly pumping to dewater the facility.[1]

Organization

This memorandum is organized to first provide the key finding of the peer review, which is then supported by a more complete discussion of elements of the Report and associated research.

Key Finding of Peer Review

Based upon the lack of historic data and reports to provide both context and a complete technical set of facts, the conclusions reached by the Report's cause-and-affect analysis of this incomplete set of facts appear without merit in many instances. As such, it is not possible to fully place blame on the current drought conditions or other external factors to explain the current groundwater level conditions being experienced by the subject properties. Although the drought is undoubtedly a primary contributing factor, the actions of CEMEX could have caused or at least exacerbated the degraded local groundwater conditions.

Specifically, absent water in the "V" ditch since September 4, 2013, coupled with the absence of groundwater elevation contour maps and estimates of the hydraulic gradient that should have been routinely prepared, CEMEX cannot demonstrably be excused from fault. Had this information been available, the relationships between actions of CEMEX and the groundwater conditions at the subject properties could more readily be established and understood.

Although, it should be noted, that even if water delivered to the "V" ditch, the groundwater levels under the subject properties may still have declined due to the current extreme drought conditions and other external factors. But, with an incomplete set of facts and obvious violations of Conditions of Approval, the Report cannot reach a determinant conclusion that CEMEX has no fault – even if that were the case.

Detailed Report Review

As noted above, the August Addendum provided additional data and assessment of facts in an effort to support conclusions of the Report. The data and assessment in the August Addendum is independently addressed first, as it affects the review of the six primary sections of the Report.

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[1] As discussed in this memorandum on pages 4/5, the August Addendum claims the monthly power records from August 2003 through June 2014, translated to volumes of water, represent deliveries to the "V" ditch. However, as noted in Condition 48, the regular reporting should provide "*data concerning (1) the locations and amounts of mine dewatering, (2) the locations and amounts of water delivered to the recharge ditch, and (3) the locations and amounts of water delivered elsewhere.*" Since there is no clear distinction in the data provided with the August Addendum, the data is recognized as only representing concern (1).

The Report includes six primary sections: (1) Introduction, (2) Nature of Complaints, (3) Mining Operations and Monitoring, (4) Rainfall Data for Lemon Cove, (5) Hydrologic Conditions for the Kaweah River, and (6) Summary and Conclusions. Each of these is independently addressed after the August Addendum.

August Addendum

This memorandum provided "*a discussion of the operations of the recharge trench at the CEMEX Stillwell Mine.*" The memorandum continues by citing electrical use records for the pump(s) used to provide water to the "V" ditch, pump size and flow rate information from the pump supplier, pump performance curves, and a table equating the monthly power records from August 2003 through June 2014 to gallons of water per month.

The August Addendum also included an email dated August 5, 2014 from CEMEX employee Pete Locastro that states "*Noted on the excel sheet are the dates and amounts we pumped into the north pond.*" (See **Attachment 5**.)

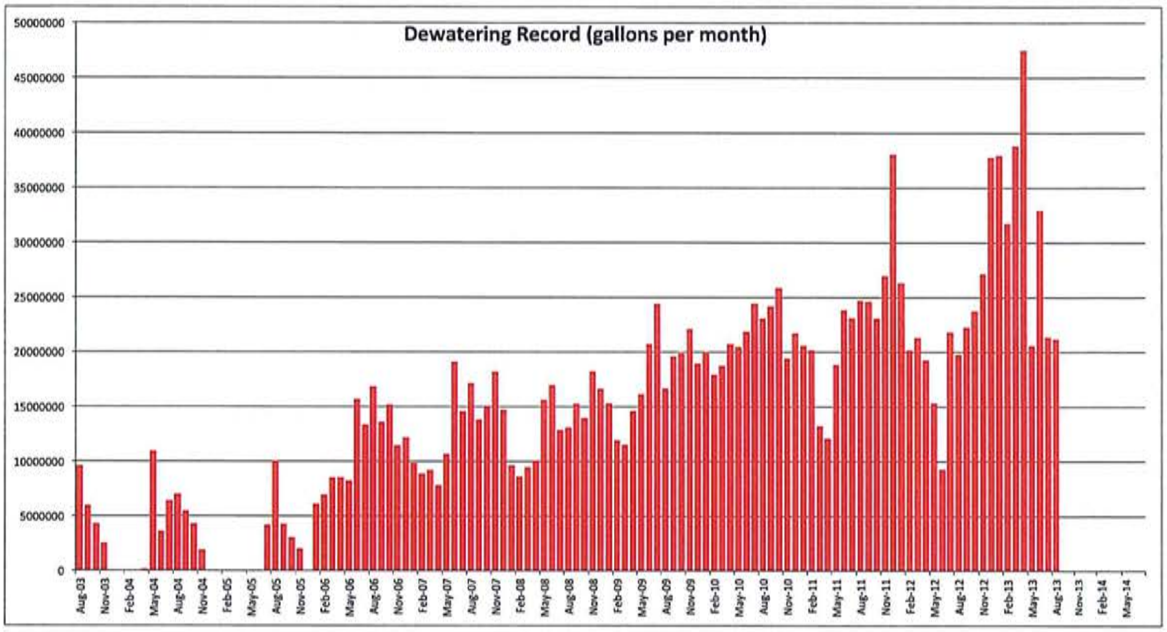
Assessment:

The August Addendum was intended to resolve the previously lacking information of historic discharges to the "V" ditch. However, though the underlying power data (and subsequent translation to gallons delivered per month) does demonstrate consistent power usage since January 2006, the representation that it also represents delivery to the "V" ditch is not conclusive and conflicts with other statements and data.

Specifically, the monthly well-level data collected by Dellavalle and represented in the Report often included notes associated with the data collection event. For instance, as shown in **Attachment 6**, notes for the monitoring wells include: "Ditch running full," "Ditch ½ full," and "No water in the ditch." If, as suspected but not confirmed, the "ditch" referenced in these notes is the "V" ditch, then there are several months when the measurement was taken and no water was in the ditch. This conflicts with the power data from the August Addendum that implies water was in the ditch in these months. Because mining operations may vary daily, it is unclear if on the day groundwater levels were measured, pumping to the "V" ditch was not occurring, but was occurring other days during the same month, or whether no water was being discharged for a longer period – even for several months in a row.

Further, the Report, assessed in more detail in the latter sections of this memorandum, specifically states: "*The water levels have been measured monthly since May 2005, which is more than three years prior to the beginning of dewatering and use of the recharge trench.*" (Report, p. 5). This would translate to dewatering operations beginning sometime after May 2008. Yet, the August Addendum states: "*Continuous dewatering and discharge to the recharge trench occurred from January 2006 until June 17, 2013...*" (August Addendum p.1/2). The data from the August Addendum is presented in **Figure 1**.

The start date of dewatering activities and discharge to the "V" ditch in these two instances conflict by several years. There is no evidence provided as to which is correct. One possible conclusion is that the power records indicate power consumed by the Quarry, but do not directly translate to discharge to the "V" ditch. This possibility is supported by the email statement indicating water was pumped to the North Pond (see **Attachment 5**). The North Pond is not connected to the "V" ditch.



Finally, the August Addendum simply provides power usage records and a translation (and assumption) that the power use was only for pumping to the "V" ditch. No comparison between the timing and quantity of implied pumping to the "V" ditch is made with well level measurements articulated in the Report. In order to reach a possible conclusion that the mining operations have no fault in the current groundwater conditions under the subject properties, it would be require that some comparison of the assumed discharge timing and quantities with measured groundwater levels be conducted.

Conclusion:

The August Addendum lacks any analysis to demonstrate whether a relationship exists between deliveries to the "V" ditch and the groundwater levels underlying the subject properties. Furthermore, and probably more important, statements in the memorandum regarding power records and the power records themselves seem to conflict with other data discussed more fully in the individual Report sections below. For instance, the August Addendum's statement about "continuous dewatering and discharge to the recharge trench…" conflicts with the Report's representation of timing of dewatering activities. It is not clear which representation is correct. Also, given the notations marked by Dellavalle's laboratory personnel regarding "No water in ditch" and "Ditch full," coupled with the seems to indicate that, although pumping was occurring, the discharge was not necessarily to the "V" ditch. Rather, the pumping records are likely a good indication of a portion of the first required reporting item for Condition 48 – "*the locations and amounts of mine dewatering*." Although the "amounts of mine dewatering" may be provided, the "locations" are not.

Report Section 1.0 Introduction

This section of the Report identifies two of the primary governing Conditions: 46 and 49 and notes that they are "*used as* the *basis for the technical evaluation of the complaints…*" (Report, p. 3). This section also notes other information considered by the Report including: "*the history of mining and dewatering at the Stillwell Quarry, the available data regarding water levels in neighboring wells and monitoring wells on the Stillwell Quarry property, rainfall data for Lemoncove, and hydrologic conditions on the Kaweah River.*" (Report, p. 3/4).

Assessment:

While the two conditions cited are vital, the Report failed to discuss Condition 48 or 55, among others.[2] These particular Conditions include the following:

> Condition 48: *In addition to the Annual Groundwater Monitoring Report required by the Groundwater Monitoring Plan, the applicant shall make available to the RMA on a monthly basis, data concerning (1) the locations and amounts of Mine dewatering, (2) the locations and amounts of water delivered to the recharge trench, and (3) the locations and amounts of dewatering delivered elsewhere. This data shall be tabulated and provided in a form acceptable to the RMA.*

> Condition 55: *The proposed "V" ditch along the east side of the project site shall contain a sufficient amount of water in order to establish a groundwater mound (groundwater barrier) to maintain water levels in neighboring wells. The trench shall be constructed to a depth sufficient to intersect the layer (substrata) of cobbles, or comparable pervious materials, that occurs locally beneath the site (a depth of approximately 6 to 8 feet). The sides and bottom of the "V" ditch shall be designed and maintained to maximize the amount infiltration necessary in establishing the groundwater mound. Water produced from dewatering the mine site shall not be pumped directly into the "V" ditch, but shall initially be pumped into a holding basin(s) to allow fines in the water to settle out and flocculation and precipitation of dissolved iron minerals to occur.*

Additionally, while the other information cited as "considered" by the Report would generally be informative and useful for an evaluation such as this, the Report did not identify other considerations that could also be informative such as: (1) new wells drilled

[2] The August Addendum, assessed previously, meets a portion of the data requirements of Condition 48. But as noted previously, it is not clear which of the subsets of data it actually represents.

or used uncharacteristically upgradient from the neighboring wells that could contribute to groundwater conditions (e.g. to provide frost protection during extremely cold temperatures in early December 2013, or as an irrigation source in place of surface water from the Lemon Cove ditch or Foothill ditch), or (2) historic changes in water level in Lake Kaweah an its potential relationship to localized hydraulic gradients. The Report also did not reference any of the prior analysis prepared and presented in the original 2002 EIR – in particular the *Hydrologic Data Evaluation Report*, June 10, 2002 that was also prepared by EMKO (see **Attachment 7**). This particular document included extensive analysis in 2002 of the existing property's (pre-Quarry) relationship with local groundwater levels and subsurface flow and direction.

Conclusion:

As noted from reading each Condition, these also should have been part of the Report's "basis for the technical evaluation" of the complaints. Specifically, and as noted previously, (1) lacking the full compliment of data required in Condition 48 presents significant challenges to understand the relation between Quarry operations and neighboring wells, and (2) lacking physical water delivery to the "V" ditch as required by Condition 55, which has not occurred since September 2013, presents significant challenges to creating and maintaining a "groundwater mound."

Further, and as discussed below in related sections, other external factors should have also been at least noted as needing to be investigated to understand if they could be contributing factors (e.g. when the Lake level fluctuates normally, is there a corresponding affect to groundwater elevations down-gradient from the Lake's southern saddle dam?).

And finally, lack of reference to the original studies prepared to support the EIR is problematic as this information provides vital context to the pre-Quarry conditions, expected impacts, and proposed mitigation strategies that resulted in the adopted Conditions.

Report Section 2.0 Nature of the Complaints

This section of the Report simply lists the complaint letters from January 2014, references a figure and summarizes the complaints as "*to do with reduced well yield or low water levels, and that the issues began one to two months prior to the end of January 2014 (i.e. late November to late December 2013).*"

No assessment of this section was necessary.

Report Section 3.0 Mining Operations and Monitoring

The first portion of this section describes operations of the Quarry, noting that dewatering began in September of 2008 and that wires were stolen from the pump used to fill the "V" ditch on two occasions: (1) stolen on June 17, 2013 and replaced on June 21, 2013, and (2) stolen on September 4, 2013 and not replaced. No water has been pumped to the "V" ditch since September 4, 2013.

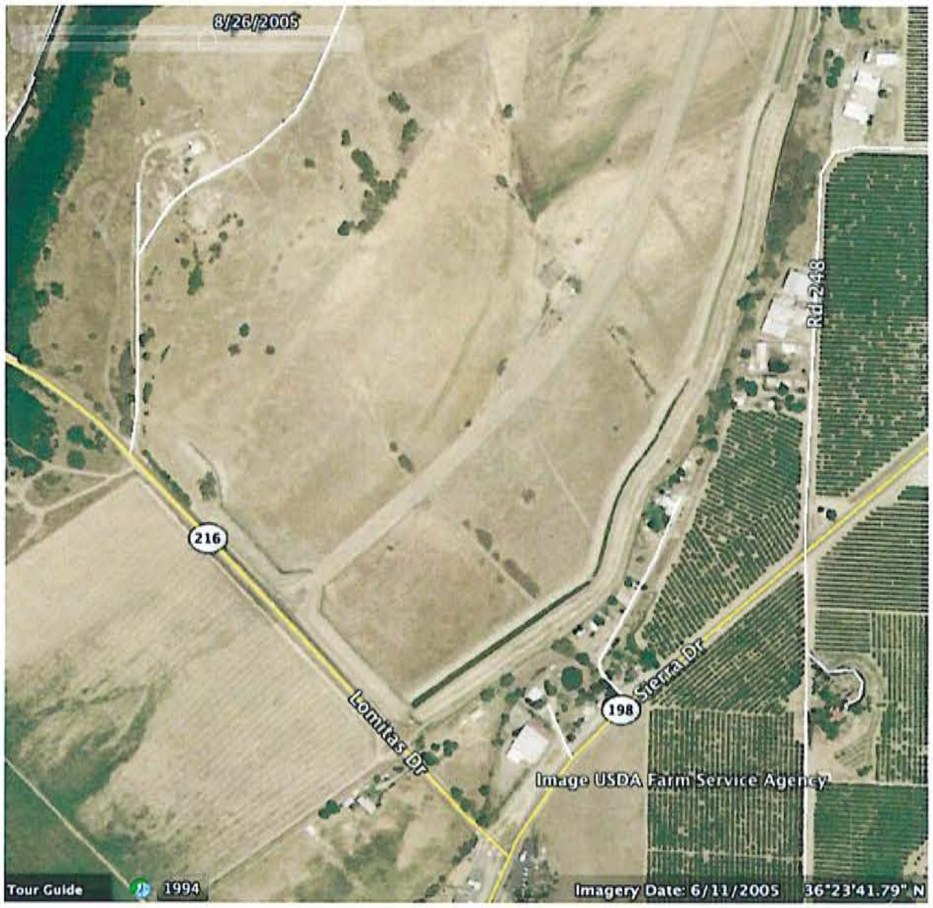
The section continues by detailing the monitoring of groundwater levels since May of 2005 and discusses analysis of groundwater levels from the individual well data. The section concludes by stating: "[T]*hus, the low water levels reported in the complaints discussed in Section 2.0 are not a recent incident and have been occurring cyclically since at least August 2011. The data clearly demonstrate that the groundwater level in the area was already dropping rapidly prior to the shutdown on September 4, 2013…*" (Report, p. 5)

Assessment:

The Report's generalized assessment of groundwater level data from individual wells is misleading and potential wrong. Lacking a common datum to reference the individual well data, and lacking clarity or assessment in the August Addendum regarding the quantities delivered to the "V" ditch as required by Condition 48, it is not possible to reach a conclusion about any relation between water delivered to the "V" ditch and the groundwater levels in the individual wells. For instance, if during the prior instances when wells were noted to have appreciable decreases (e.g. the Report draws attention to period of August 2011 until May 2012), water of sufficient quantity was not being delivered as required by Condition 55, then it is possible the lower groundwater elevation readings were a result of insufficient water in the "V" ditch and not, as the Report contends, part of cyclical decreases caused by other factors. The August Addendum does indicate dewatering activities during this period (see **Figure 1**). But if groundwater levels were dropping as noted, would increased discharges have stabilized or reduced the lowering? Condition 55 specifically states that water of sufficient quantity to maintain groundwater levels be delivered to the "V" ditch.

Essentially, lacking the fundamental data, no analysis can be completed to understand whether the amount of water delivered to the "V" ditch was "sufficient" to meet the groundwater-mounding objective. The Report, therefore, cannot conclude that water was always in the ditch since 2008 when it has no data from which to base that fact. And thus, it cannot be concluded that historic fluctuations in the water levels – with lowered groundwater levels equivalent or even greater than being experienced in January 2014 – were due to factors beyond the control of the Quarry's operation. Again, absent the vital facts, it is plausible that decreases seen in previous months correlate to periods when *insufficient* water was not being delivered to the "V" ditch. Absent the facts, no analysis can be made, thus no decisive conclusion can be reached.

Furthermore, in contrast to the Report's statement: "[T]*he water levels have been measured monthly since May 2005, which is more than three years prior to the beginning of dewatering and use of the recharge trench.*" (Report, p.5), aerial photography from June 2005 appears to show water in a newly constructed "V" ditch. The figure below is a screen shot of the June 11, 2005 aerial image showing water in the "V" ditch. The water may have been sourced from the northern pond. Though this may have been a temporary action for testing or the beginning of more routine deliveries into the "V" ditch, the appearance of water in June 2005 contrasts with statements in the Report. According to the August Addendum, dewatering did occur in June 2005.



On a related note, reviewing the monthly well data from May 2005 through July 2014 (which extends beyond the data set available at the time of the Report), various observations can be made that are at least as relevant as the statements in the Report derived from the same data. For instance:

1. The Cairns Well (see Report Figure 5) shows a dramatic drop in water levels between September 2013's reading and October's reading. Though this well has shown some variability in previous records, this dramatic drop between these two months appears to correlate with the stoppage of delivery into the "V" ditch.

2. The Morton Well (see Report Figure 4) shows a downward trend between January and August 2013 that, if projected to continue at the same rate, would drop slightly below 10 feet by November 2013. Instead, the well drops significantly by

October, well below what would have been projected. This also corresponds to the stoppage of delivery to the "V" ditch.

3. The well data recording depth was often accompanied by a note if something relevant was encountered. For instance, the note may say "ditch was full" or "well was running," or may note that no key was available and therefore no reading taken. Many instances have no notes recorded in the spreadsheet, but that may not mean relevant factors should have been noted. For instance, in the Report's Figure 5, the Cairns well shows a series of high and low recordings starting about September of 2011 through May of 2012. There are no notes corresponding to any of these readings. Is it possible that the well was or had previously been running at the time of the readings? What other events would make the values jump up and down? The corresponding data for the Morton well (see Report Figure 4) is only lower during the period. Why did it not also experience the high and low fluctuations? Similarly, the four monitoring wells (located along the "V" ditch alignment on the upgradient side) also showed a drop during this period. But they also all have no records for several months with notes stating "no key."

These assessments could lead an evaluator of the data to different conclusions than those reached in the Report. This again is illustrative of the point that lacking all of the pertinent facts limits the ability to make decisive conclusions about cause and affect.

Finally, this section makes an important anecdotal note that states: "*The quarry pit had filled with water to a depth of approximately 15 feet below ground surface, as shown in Figures 2 and 3.*" (Report, p. 4/5). When reviewing the 2002 hydrologic report prepared in support of the EIR, during pre-project conditions, groundwater elevations were noted to be between 3 and 6 feet below the ground surface. This illustrates a simple fact that is not assessed by the Report – that the open pit creates a different hydraulic condition than if the material were left undisturbed. In other words, with the removal of material that previously contributed to the hydraulic gradient affecting the subsurface flow of groundwater, the gradient has changed. Groundwater still flowing subsurface but upgradient from the open pit now has a new lower elevation to seek as it flows underneath the subject properties. As was originally identified and the primary reason for the Conditions, the open pit would have this affect. Thus, the "V" ditch was designed as mitigation to provide a groundwater mound (e.g. a method to maintain the pre-project hydraulic gradient). The need for a long-term solution to this issue is also recognized with the planned design of the reclaimed mine site. As planned, there will be two reclaimed lakes of different elevation. The "V" ditch or similar recharge trench is to be constructed, in conjunction with a series of weirs, to "*maintain current groundwater elevations along the properties to the northeast of the project area.*" (Condition 52.) These facts demonstrate that during analysis of the project prior to approval, concern was expressed about the open pits creating a lower groundwater elevation and adversely impacting the hydraulic gradient of subsurface flow under the subject properties. The Report clearly provides evidence that the water elevation in the open pit is as was expected, yet it does not appear that the planned for mitigation, as recognized in the Conditions, is sufficiently providing a groundwater mound.

Conclusion:

The Report is too quick to reach decisive conclusions when relevant facts necessary for reaching such a conclusion is absent. Though the conclusion may still be accurate if it were to be reassessed with all relevant facts available, making such conclusions absent them is without merit. Even with the additional information provided in the August Addendum, there are not enough relevant facts and analysis to reach determinant conclusions.

The Report attempts to remove any fault from CEMEX through its interpretation of the limited groundwater elevation data and associated notes. As stated previously, the current unprecedented drought condition is a primary contributing factor to current degraded groundwater conditions at the subject properties. But absent an understanding of the relationship of groundwater mounding to the upgradient groundwater elevations, CEMEX cannot be summarily excused from fault.

Report Section 4.0 Rainfall Data for Lemon Cove

This section presents historic rainfall data for Lemon Cove. The Report states: "*Although the 2013-2014 water year is not complete, the first four months of this water year have been the driest October-January period measured in Lemoncove since 1923, based on the CDEC data.*" This fact illustrates the severity of the drought.

No assessment of this section was necessary.

Report Section 5.0 Hydrologic Conditions on the Kaweah River

This section discusses historic flows on the Kaweah River ("River") and presents that "[H]*igh river flows can recharge the local groundwater aquifer from the area north of the Stillwell Quarry…*" (Report, p. 6). The Report also notes that "[C]*onversely, low river flows may not provide any recharge and can also allow the aquifer to drain more rapidly toward the river.*" (Report, p. 6). The Report elaborates on the timing and duration of flows to the River and compares conditions from October 2010 through early February 2014, implying the likely affect to recharge during these different water years.

Assessment:

As detailed in the Report's Section 2, complaints about water levels began in early to late December of 2013. At that time, releases from Lake Kaweah ("Lake") had been nearly zero for at least a month. The Report's data and figures imply that that the limited irrigation releases during the summer and no flood releases during the winter months are primary factors in the lowering the groundwater under the subject properties.

However, this cyclical period of flows has been routine for decades with no identified impact to groundwater levels at the subject properties. For instance, looking at the 2006 to 2007 condition, releases from the Lake became near zero by October 1, 2006 and remained as such until January 2007 (Report, Figure 9). Rainfall during this period was also below normal, comparable to the rainfall in 2012/2013, which the Report notes was part of the lead up to the current degraded condition (Report, Figure 8). When inspecting the well level monitoring data for this period, the wells on the subject properties and the monitoring wells were all stable, with no apparent impact from the near zero flows and limited rainfall for October 2006 through January 2007. It is important to note that excavation of the Quarry had not yet begun as of that period, according to the Report. In contrast, the August Addendum indicates that dewatering began on a continuous basis beginning in January 2006 (see **Figure 1**) – which again raises questions about contradictory statements between the Report and the August Addendum.

The Report also states that the River functions to recharge the local aquifer from the north. However, this appears to be in contrast to a few other previously provided facts – namely the analysis to support the EIR. The EIR's hydrologic study states the following with regard to River recharge:

1. "*According to the property owner, if riparian water is not provided to the northern ponds, the ponds would become dewatered very rapidly. In addition, the owner reports that once the ponds are dewatered, it would take a very long time to recharge the ponds with groundwater inflow from the upgradient direction and lateral inflow from the Kaweah River through the geologic material present between the river and the ponds. Thus the primary source of water with the northern ponds is riparian water that is diverted from the Kaweah River.*" (p. 10, Section 3.3, Hydrologic Data Evaluation Report, EMKO, June 10, 2002, see **Attachment 7**)

2. "*Thus the groundwater table will be higher than the water level in the river, preventing the flow of water from the river to a dewatered pit during the mining operations.*" (p. 14, Hydrologic Data Evaluation Report, EMKO, June 10, 2002)

3. "*Therefore, the water available to the neighboring wells will remain the same and will come from groundwater flow entering the neighboring properties from upgradient, which is the same source of water currently entering these wells.*" (p. 15, Hydrologic Data Evaluation Report, EMKO, June 10, 2002)

4. "*In addition, use of a cut-off wall to prevent inflow from the Kaweah River during dewatering is unnecessary, as discussed above in Section 3.3. Specifically, when the Northern Ponds are pumped for irrigation, little or no water percolates in the ponds from the river.*" (p. 15, Hydrologic Data Evaluation Report, EMKO, June 10, 2002)

5. Figure 4.4-2 presented in the 2002 EIR (EIR p. 4-53) graphically represents the groundwater flow direction as east to west across the Quarry to the River, with no flow coming from the River from the northern area. A copy of this figure is included below.

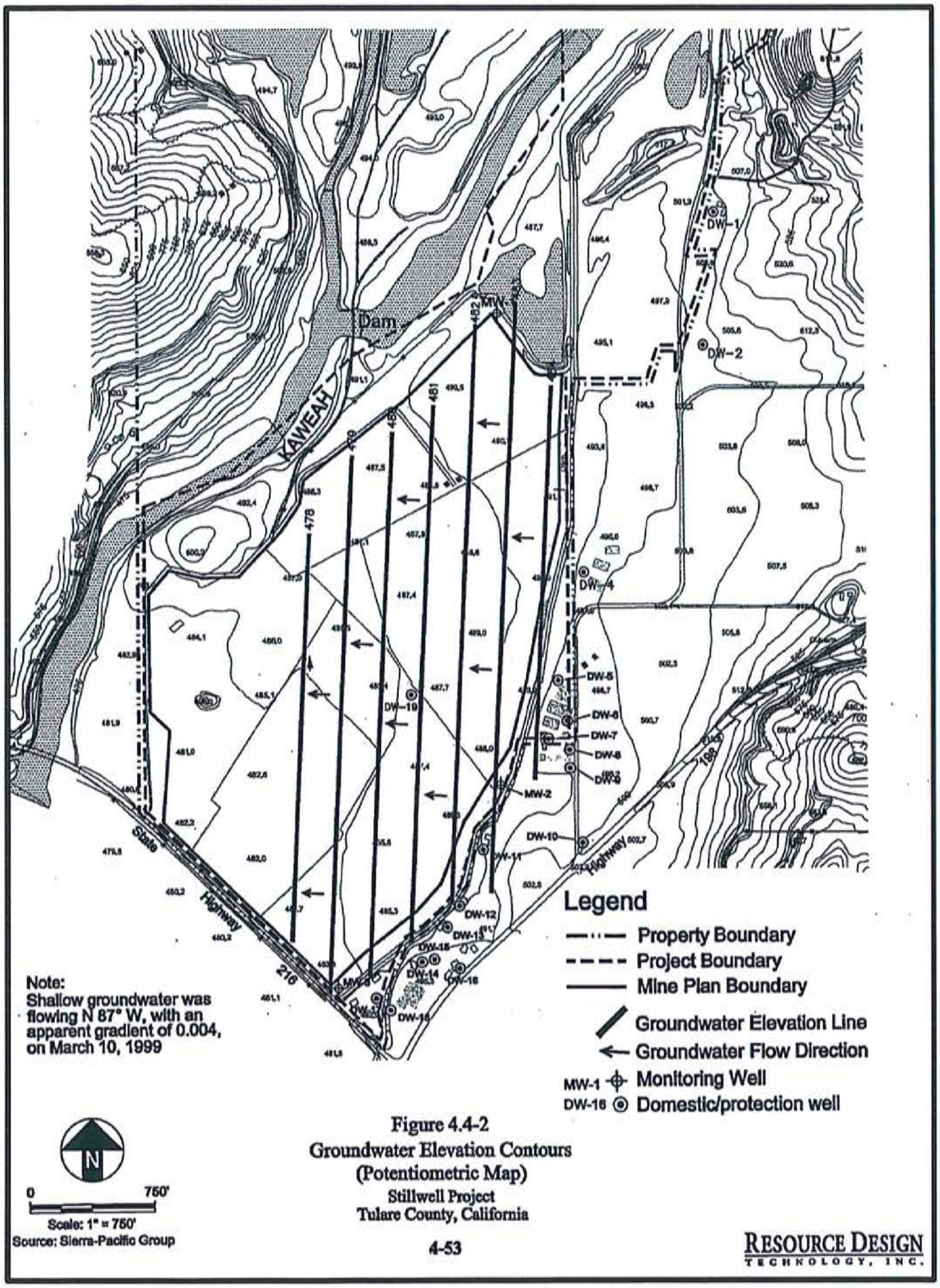


Figure 4.4-2
Groundwater Elevation Contours
(Potentiometric Map)
Stillwell Project
Tulare County, California

4-53

As is very apparent from the analysis in 2002, the River does not contribute recharge to the aquifer. However, during pre-project conditions, it likely had an influence on the hydraulic gradient and flow conditions that underlay the subject properties – essentially a mounding affect. This fact seems to be apparent since the Quarry's mitigation to address concerns about groundwater levels dropping under the subject properties was to build the "V" ditch to mound water and maintain hydraulic gradients.

Conclusion:

The current unprecedented drought conditions are having an effect throughout the state on a multitude of factors such as reservoir elevations, stream flows, recharge to groundwater and groundwater levels. However, at the time of the complaints the severity of the current drought was not yet fully apparent – as it was January and wells were seeing problems starting at least the prior month.

When looking at the historic near-zero flow conditions similar to that in 2012 and 2013 with low rainfall, coupled with statements about the limited, if any, recharge benefit from the River, the Report's implied conclusion that conditions in late 2013 and January 2014 create a condition severely different than experienced in the past seems baseless.

Similar to every other conclusion of this peer review, the absence of all of the pertinent facts – especially routine representations of groundwater contours and hydraulic gradient estimates – make it extremely difficult to evaluate the relationships of the River and rainfall to groundwater elevations under the subject properties. As such, the Report should not make decisive statements that excuse CEMEX from any fault.

Report Section 6.0 Summary and Conclusions

This section restates a few key facts, and then begins a series of summary statements of its prior evaluation and conclusions. The Report includes two key statements in this section:

1. "*The declining trend in 2013 began as early as February, six months before the discharge of water to the recharge trench was stopped. There is not a correlation between the cessation of discharge to the recharge trench and the water levels in the wells.*" (Report, p. 8).

2. "*It is also worthwhile to note that, had the data supported the opposite conclusion, two of the potential remedies identified in Condition of Approval No. 49 are to reduce the amount of pit dewatering, or if necessary, cease mining operations. Both of these conditions have existed at the site since September 2013.*" (Report, p. 8).

Assessment:

The assessment of each section, as detailed above, is relevant to the summary statements of the Report. Please refer to those prior assessments for further detail.

With regard to the two key statements made in this Section, the following is offered for consideration:

1. The current drought very likely has had an adverse impact on localized groundwater conditions. Whether due to other external factors from higher pumping by other groundwater users even further upgradient and less inflow from the normal recharge sources, the groundwater levels would likely decline. This trend, as noted by the Report, appears to have begun by the spring of 2013. However, because pertinent reports were not prepared and provided to the County and the water discharges to the "V" ditch were stopped in September, the rate of decline very well could have been exacerbated by the actions of CEMEX. The Report cannot make decisive statements that there is not a correlation between discharge to the "V" ditch absent further understanding of what conditions would have been had sufficient water been in the "V" ditch as was required by Condition 55.

2. The Report clearly leaves out key text from Condition 49 as it attempts to imply that the same degraded groundwater conditions would occur if the remedy of ceasing operations or reducing the amount of pit dewatering were imposed. Condition 49 clearly states: "*If a significant problem…be caused by mining activities, then immediate action must be taken to correct the condition, which may include (but is not limited to) modifying the recharge ditches to provide more recharge capacity, reducing the amount of pit dewatering, or if necessary, ceasing mining operations.*" The first focus is on modifying the recharge ditch, but the Condition also leaves open any option with the included parenthetical. When also considering Condition 55's requirement that "sufficient" water be discharged to the "V" ditch, degraded groundwater conditions could potentially be resolved by simply increasing the quantity of discharge. However, this resolution option appears to not have been recognized by the Report either.

   Furthermore, ceasing mining operations would trigger reclamation actions as detailed in the Quarry's permit conditions, such as Condition 52. These reclamation actions included flowing water between two lake elevations through a recharge ditch, using a series of weirs, to assure groundwater elevations on the subject properties were maintained. Adding this statement, which essentially argues that remedies to the current degraded groundwater conditions would result in the same degraded conditions, provides no value to the Report. Rather, by omitting part of the Condition, questions can be raised about the overall evaluation and its conclusions.

Conclusion:

The Report's overall evaluation is based on an incomplete set of facts. Thus, the conclusion that the Quarry operations are not at fault is without merit. It is possible that the Report's conclusions are completely correct. But, absent relevant data, coupled with questions about the overall evaluation in the Report, as detailed in the sections above, it is difficult to say CEMEX is without fault.

Attachment 1

Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry
Tulare County, California

Prepared by:

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February 26, 2014

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Tulare County, California

1.0 INTRODUCTION

This report has been prepared at the request of Tulare County Resource Management Agency (RMA) to address several written complaints received by RMA in late January 2014 regarding groundwater conditions adjacent to the CEMEX Construction Materials, Inc. (CEMEX) Stillwell Quarry near Lemoncove, California (State Mine ID 91-54-0034). The following Conditions of Approval were adopted by the Tulare County Board of Supervisors as part of the Conditional Use Permit for the Stillwell Quarry:

> 46. Prior to commencement of mining, the applicant shall prepare and implement the June 2002 Groundwater Monitoring Program adopted for this project. The purpose of the monitoring plan shall be to assess the effectiveness of the V-ditch design in maintaining groundwater levels in wells along the east and southeast boundary of the site and in monitoring the quality of water supplying recharging (sic) the local aquifer. All groundwater monitoring and reporting shall be done in accordance with the approved plan. Any property owner with a water well (or water wells) located within a ½ mile radius of the property boundaries may participate in the groundwater monitoring program. The project applicant shall notify all owners with wells within ½ mile of the property boundaries of the opportunity to participate in the groundwater monitoring program. Participation in the program requires that the wells be accessible and in a condition that allows them to be tested on a regular basis.

And,

> 49. The project shall not affect the water level, yield, or quality of any well*, both during the mining operations and subsequently as a reclaimed site. Upon receipt of a written complaint from any owner of a pre-existing well which details an alleged impact to the well's water level, yield, or water quality, the RMA shall request a report from a licensed hydrogeologist explaining the problem. If a significant problem can be professionally demonstrated by a licensed hydrogeologist to be caused by mining activities, then immediate action must be taken to correct the condition, which may include (but is not limited to) modifying the recharge ditches to provide more recharge capacity, reducing the amount of pit dewatering, or if necessary, ceasing mining operations. (* As used herein, an impact to a well shall not be deemed to have occurred if the well water level, well yield, and quality are within ranges of existing conditions specified in the EIR).

Conditions of Approval Nos. 46 and 49 are used as the basis for the technical evaluation of the complaints received by the RMA. The technical evaluation presented below considers the history of mining and dewatering at the Stillwell Quarry, the available data regarding water levels in neighboring wells and monitoring wells on the Stillwell Quarry property, rainfall data for Lemoncove, and hydrologic conditions on the Kaweah River.

2.0 NATURE OF THE COMPLAINTS

Table 1, below, summarizes the complaints received by RMA in January 2014.

Table 1. January 2014 Complaints			
Owner	Address	Date	Nature of Complaint
Packard	33511 ½ Sierra Dr.	1/30/14	For last 2 months, well goes dry quickly
Morton	33511 Sierra Dr.	1/30/14	Well going dry, "pumping air" for over a month; well 17 ft deep, water level at 14 ft
Cloud	33481 Sierra Dr.	1/30/14	Well running dry and "pumping air"
Rodriguez	33513 Sierra Dr. #A	1/29/14	Pump pulling in air due to lack of water, for about a month
Cairns	24822 Ave. 338	1/31/14	Well is pumping properly; concern for neighbors

Figure 1 illustrates the location of the existing quarry excavation, the recharge trench, the 24822 Avenue 338 property, and the 33481 to 33513 Sierra Drive properties. Figure 1 was prepared from a screen-capture image from Google Earth. The imagery date for the aerial photograph in Figure 1 is June 15, 2011.

All of the complaints received by RMA state that the well issues have to do with reduced well yield or low water levels, and that the issues began one to two months prior to the end of January 2014 (i.e. late November to late December 2013).

3.0 MINING OPERATIONS AND MONITORING

According to information provided by CEMEX (Pete LoCastro, plant manager, personal communication, February 13, 2014), dewatering at the Stillwell Quarry began in September 2008. Water from the mining excavation was pumped into a holding basin to allow fines to settle out. The water in the holding basin was then pumped to the recharge trench. Pumping to the recharge trench occurred continuously until June 17, 2013, when the wiring to the pumps was stolen. The wiring was replaced and the pumps restarted on June 21, 2013. The wiring was stolen a second time on September 4, 2013. A decision was made at that time to leave the pumps off and to cease dewatering of the Stillwell Quarry.

A site reconnaissance of the Stillwell Quarry was conducted on February 11, 2014 with Henry Dong of RMA and Peter LoCastro and Ronald Wilson of CEMEX. At that time, the cut wires at the electrical boxes serving the pumps were observed and no water was being pumped from the quarry pit or into the recharge trench. The quarry pit had filled with water to a depth of approximately 15 feet below ground surface, as shown in Figures 2 and 3.

Consistent with Condition of Approval No. 46, a groundwater monitoring program has been conducted since 2005 by DellaValle Laboratory, Inc. for CEMEX. The monitoring program includes measurement of groundwater levels in nine private wells near the quarry and four monitoring wells at the quarry site. The water levels have been measured monthly since May 2005, which is more than three years prior to the beginning of dewatering and use of the recharge trench. Of the five complaint letters received by RMA (see Section 2.0), only the properties at 33511 Sierra Drive and 24822 Avenue 338 have elected to participate in the groundwater monitoring program. Figure 4 shows the water levels that have been measured in the well at 33511 Sierra Drive. Figure 5 shows the water levels that have been measured in the well at 24822 Avenue 338. Figure 6 shows the water levels that have been measures in the four monitoring wells at the quarry site.

Figures 4, 5, and 6 show that the water levels in the neighboring wells and the onsite monitoring wells were relatively stable from 2005 through the middle of 2011. From approximately August 2011 until May 2012, the water levels in the wells decreased appreciably. The water levels subsequently recovered, peaking in January 2013 at levels that were within the same range as those that were measured in the wells from 2005 through early 2011. Since January 2013, however, the water levels have consistently declined in each of the wells shown on Figures 4, 5, and 6. In May 2012 and October 2013, the water level in the well at 33511 Sierra Drive (Figure 4) was actually slightly lower than the level measured in January 2014.

The data on Figures 4 and 5 indicate that the most rapid drawdown in the water levels in the wells at 33511 Sierra Drive and 24822 Avenue 338, respectively, began in August 2013, and that by October 2013 the water levels had stabilized and even recovered slightly.

The data from the groundwater monitoring program, as shown in Figures 4, 5, and 6, indicate that declines in the water levels in the wells adjacent to the Stillwell Quarry occurred from August 2011 to May 2012, and again from January 2013 to the present. The most recent water levels measured in the wells is comparable to the levels measured in May 2012 and again in October 2013. Thus, the low water levels reported in the complaints discussed in Section 2.0 are not a recent incident and have been occurring cyclically since at least August 2011. The data clearly demonstrate that the groundwater level in the area was already dropping rapidly prior to the shutdown on September 4, 2013 of the pumps used for dewatering and for providing water to the recharge trench.

4.0 RAINFALL DATA FOR LEMONCOVE

Rainfall measurements have been collected in Lemoncove since 1905. The data are available from the California Data Exchange Center (CDEC) website at www.CDEC.water.ca.gov, under the station name LMC.

Figure 7 shows the rainfall at Lemoncove from 1905 through Jan 2014. The rainfall data are plotted for each "water year". A water year is the period from October 1 through September 30 of the subsequent year. A water year provides a better representation of the seasonal rainfall patterns in California than does a calendar year. As indicated on Figure 7, the average water year rainfall in Lemoncove is 14 inches per year for the 110-year period of record.

Figure 8 shows the water year rainfall in Lemoncove from 2000 through Jan 2014. Figure 8 demonstrates that the last two water years have been two of the driest ever recorded. Although the 2013-2014 water year is not complete, the first four months of this water year have been the driest October-January period measured in Lemoncove since 1923, based on the CDEC data.

5.0 HYDROLOGIC CONDITIONS ON THE KAWEAH RIVER

The Kaweah River runs along the north and west sides of the Stillwell site. Flows within the river are expected to have an effect on groundwater levels in the area, as local rainfall and the Kaweah River are the only potential sources of groundwater recharge in the Lemoncove area. High river flows can recharge the local groundwater aquifer from the area north of the Stillwell Quarry (see area labeled "Kaweah River" on Figure 1), and minimize discharge from the aquifer to the river farther downstream. Conversely, low river flows may not provide any recharge and can also allow the aquifer to drain more rapidly toward the river.

Average daily flow data for the Kaweah River below Terminus Dam is available from the CDEC website (www.CDEC.water.ca.gov) for Station TRM. The average daily flow data from 1994 through February 9, 2014 were obtained for this evaluation, and are shown on Figure 9. The data indicate that there are two primary flow periods in the river each water year. During the winter, flood control releases may occur for short durations, typically between November and February. The predominant flow period, however, occurs during the summer months, when large volumes of water are released from the dam for irrigation deliveries. The irrigation releases typically occur for longer durations and at higher flows than winter flood control releases, often extending from March through September. However, during dry years, both the flood control and irrigation releases can be substantially curtailed. These variations can be seen by comparing the river flows over the past three to four years.

The 2010-2011 water year was an exceptionally wet year, with total rainfall of 21.86 inches, more than 56 percent above average. Figure 10 shows the flows in the Kaweah

River for the 2010-2011 water year, and extending into early 2012. Flood releases occurred almost constantly from early November 2010 through February 2011, with a peak rate of almost 1,800 cubic feet per second (cfs). Irrigation releases occurred continuously from early March 2011 until the first week of October 2011, with a peak rate of almost 3,000 cfs.

The 2011-2012 water year was a below-normal year, with total rainfall of 11.68 inches, or about 17 percent below average. Figure 11 shows the flows in the Kaweah River for the 2011-2012 water year, and extending into early 2013. Flood releases occurred intermittently from early November 2011 into mid-December 2011, with a peak rate of about 500 cfs. Irrigation releases did not begin until mid-May 2012 and were terminated by mid-August 2012, with a peak rate of about 2,200 cfs briefly reached.

The 2012-2013 water year was even drier than the prior year, with total rainfall of only 7.30 inches, or 48 percent below average. Figure 12 shows the flows in the Kaweah River for the 2012-2013 water year, and extending into early February 2014. There were two very brief flood releases, one in mid-December 2012 and another at the end of January 2013. Although the peak flood release reached as high as 1,100 cfs at the end of January 2013, that release period occurred for only seven days. Irrigation releases did not begin until May 2013 and were terminated before the end of July 2013, with a peak rate of only 1,000 cfs.

Figure 12 also shows that there have not been any flood control releases since the beginning of the 2013-2014 water year through February 9, 2014.

6.0 SUMMARY AND CONCLUSIONS

This technical report has been prepared at the request of Tulare County RMA in accordance with Condition of Approval No. 49 for the CEMEX Stillwell Quarry near Lemoncove, California. In late January 2014, RMA received five complaint letters from residents located to the east of the Stillwell Quarry and the associated recharge trench. Four of the letters allege that the cessation of discharge to the trench is causing a decrease in groundwater levels and a decrease in well yield. The fifth letter states that effects have not been noted in that owners well. The complaints state that the decreasing well yields have been an issue for the past one to two months.

Dewatering of the Stillwell Quarry, and pumping of water to the recharge trench, has been occurring since September 2008. On September 4, 2013, theft of the wiring to the discharge pumps occurred for a second time. At that time, dewatering activities and discharge to the recharge trench ceased.

Consistent with Condition of Approval 46, CEMEX has been conducting a groundwater monitoring program at the Stillwell site since May 2005. Only two of the property owners that submitted letters to RMA in January 2013 elected to participate in the groundwater monitoring program, and only one of those two owners has indicated that his well is experiencing a diminishing yield. The data from the groundwater monitoring program shows that declining water levels in the wells occurred from August 2011 to May 2012, and again from January 2013 to the present. The January 2014 water levels measured in the wells is comparable to the levels measured in May 2012 and again in October 2013. Thus, the low water levels reported in the letters to RMA are not a recent incident and have been occurring cyclically since at least August 2011. The data clearly demonstrate that the groundwater level in the area was already dropping rapidly prior to the September 4, 2013 shutdown of the pumps used for dewatering and for providing water to the recharge trench. The data also show that since October 2013, the water levels in the wells have actually increased slightly.

Evaluation of historical rainfall data for Lemoncove shows that the last two water years have been two of the driest ever recorded. In addition, the first four months of the current (2013-2014) water year have been the driest October-January period measured in Lemoncove since 1923.

An evaluation of hydrologic conditions on the Kaweah River demonstrates that releases from Terminus Dam and flows within the river have been diminishing over the last three water years and that there have not been any releases to the river above base-flow levels since July 2013. These hydrologic conditions on the Kaweah River indicate that groundwater recharge has been decreasing for several years and that there has likely been little or no recharge of groundwater for at least the last six months.

Based on the data presented in this report, the declining water levels in the wells in the Lemoncove area occurred in 2012, and in 2013. The declining trend in 2013 began as early as February, six months before the discharge of water to the recharge trench was stopped. There is not a correlation between the cessation of discharge to the recharge trench and the water levels in the wells. Evaluation of local rainfall and river flow data shows that the Lemoncove area has been experiencing the most severe drought conditions ever recorded in the area. Substantially diminished rainfall amounts and curtailed flows in the Kaweah River have reduced, if not eliminated, local groundwater recharge. The historically low rainfall and river discharge amounts are the most likely cause of the lower groundwater levels observed in the wells in the area.

In accordance with Condition of Approval No. 49, RMA has requested this report, which was prepared by a licensed hydrogeologist. The available data and documentation demonstrate that the concerns identified in the letters received in late January 2014 are not caused by mining activities. It is also worthwhile to note that, had the data supported the opposite conclusion, two of the potential remedies identified in Condition of Approval No. 49 are to reduce the amount of pit dewatering, or if necessary, cease mining operations. Both of these conditions have existed at the site since September 2013.

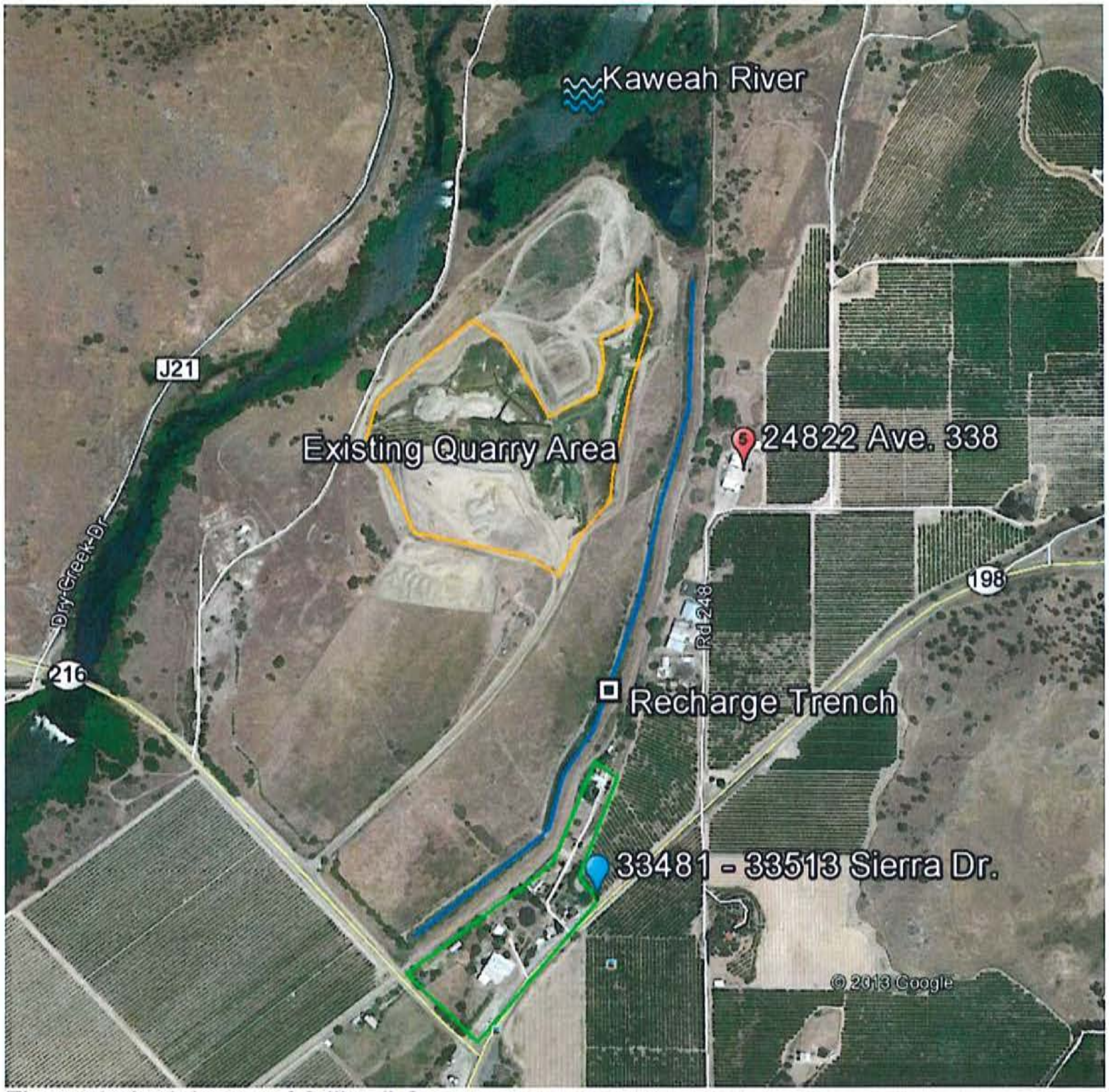

Figure 1. Aerial map of Stillwell Quarry area.

Figure 2. View looking east across Stillwell Quarry pit on February 11, 2013. The buildings in the background are at the 24822 Avenue 338 property.

Figure 3. View looking southeast across the Stillwell Quarry pit on February 11, 2013. The buildings in the background are located approximately ¼ mile north of the 33513 Sierra Drive property.

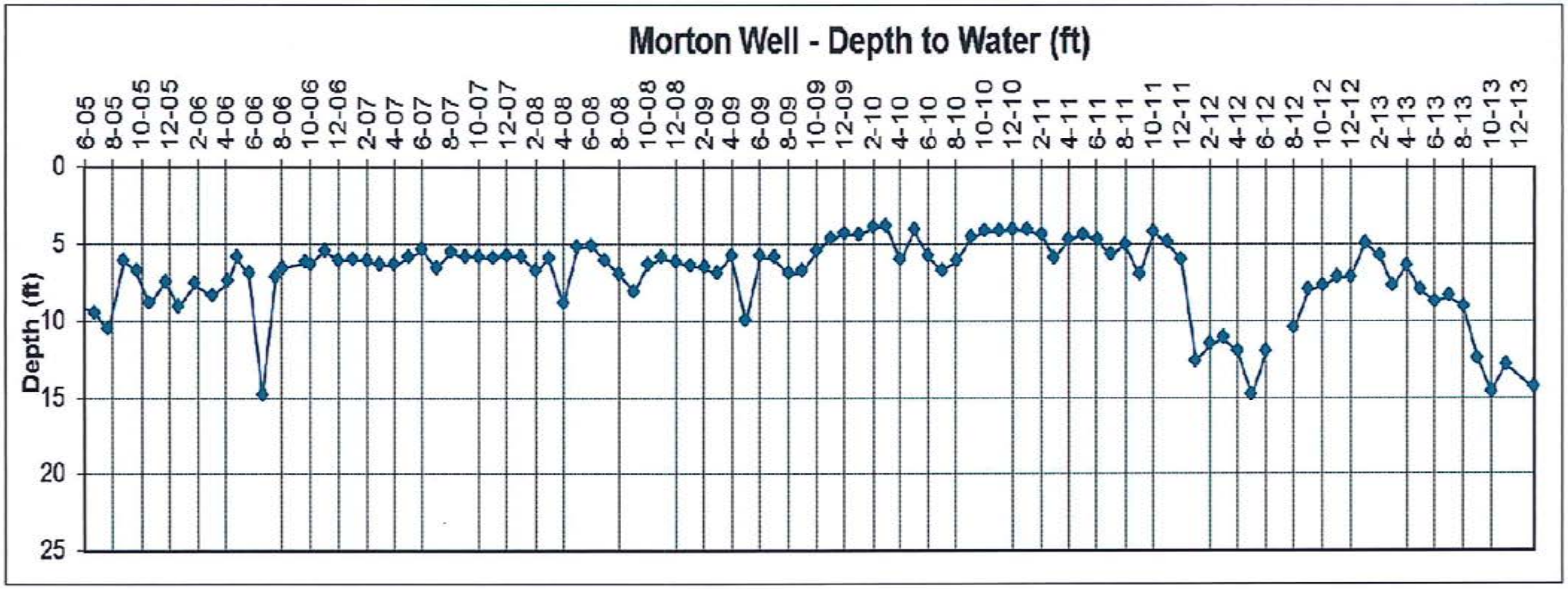

Figure 4. Water levels versus time for the well at 33511 Sierra Drive.

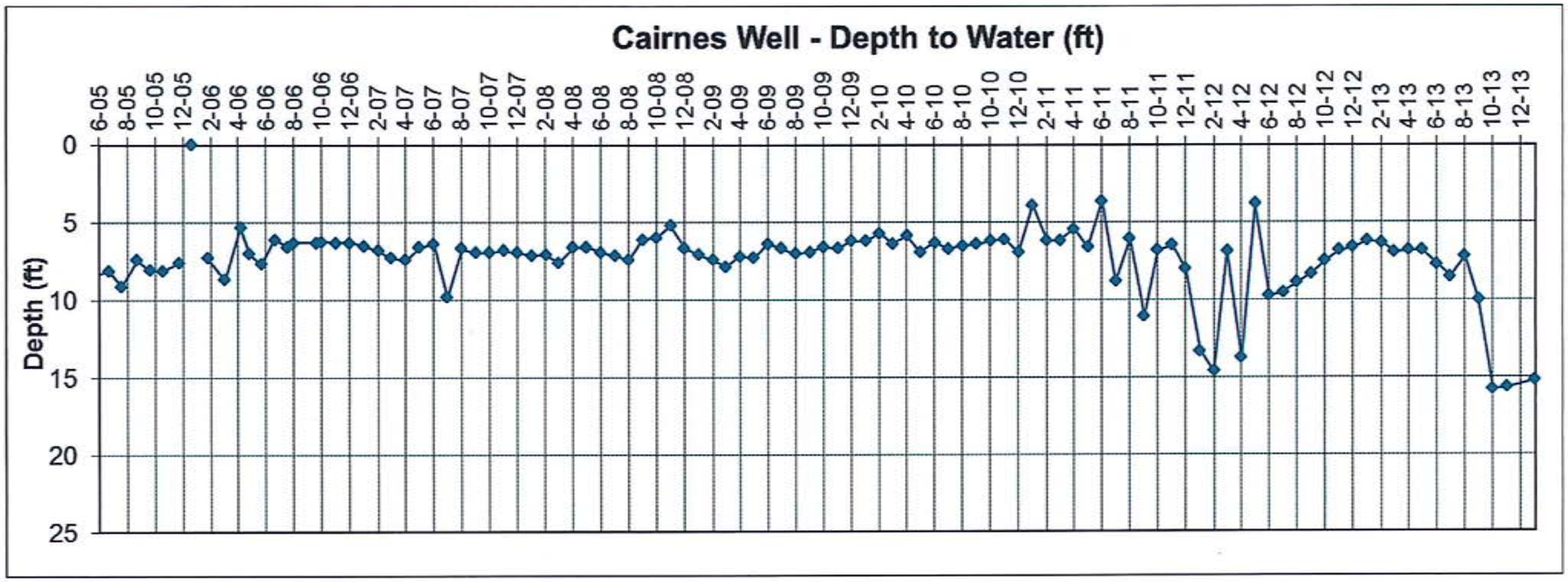

Figure 5. Water levels versus time for the well at 24822 Avenue 338.

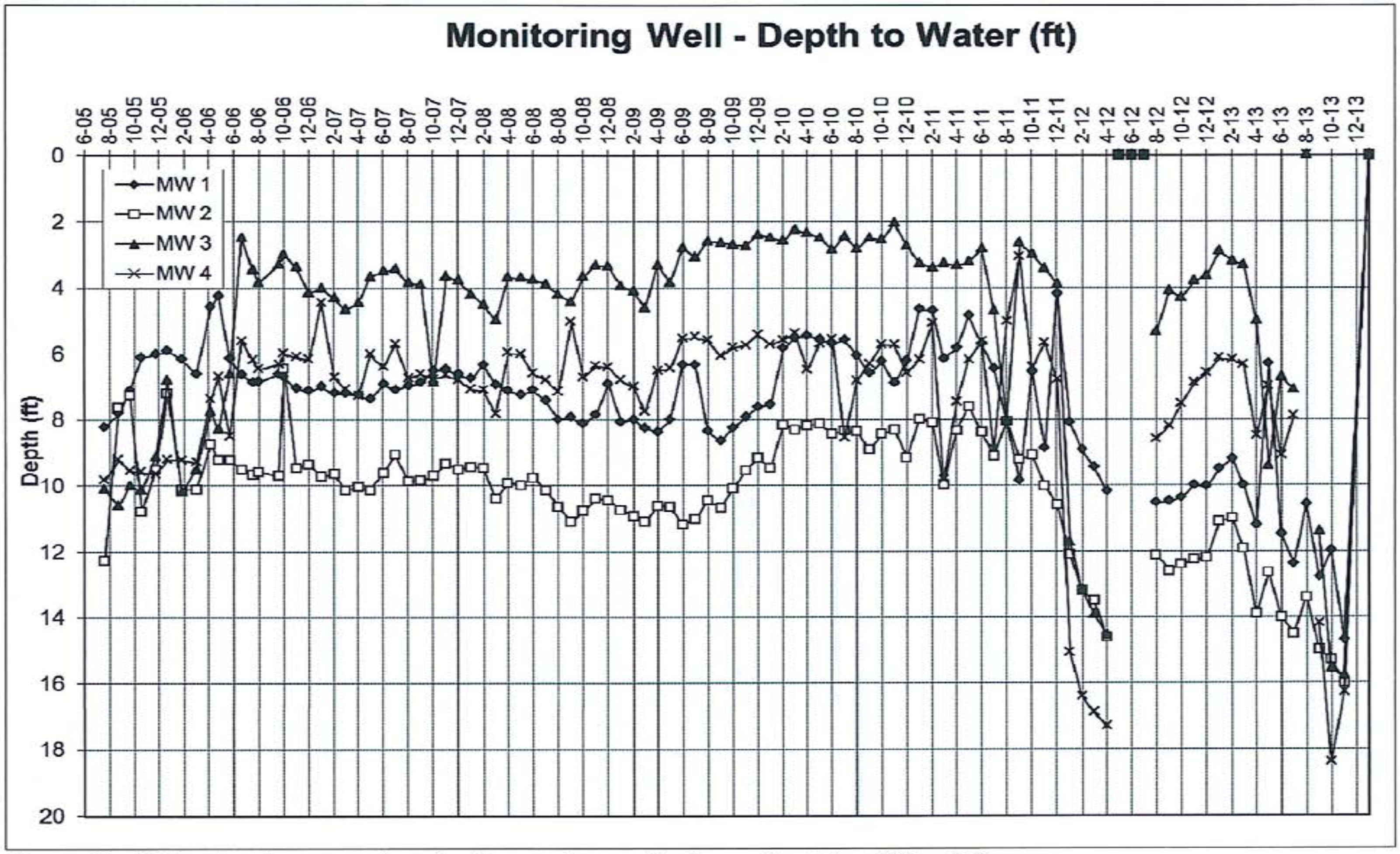

Figure 6. Water levels versus time for the onsite monitoring wells at the Stillwell Quarry.

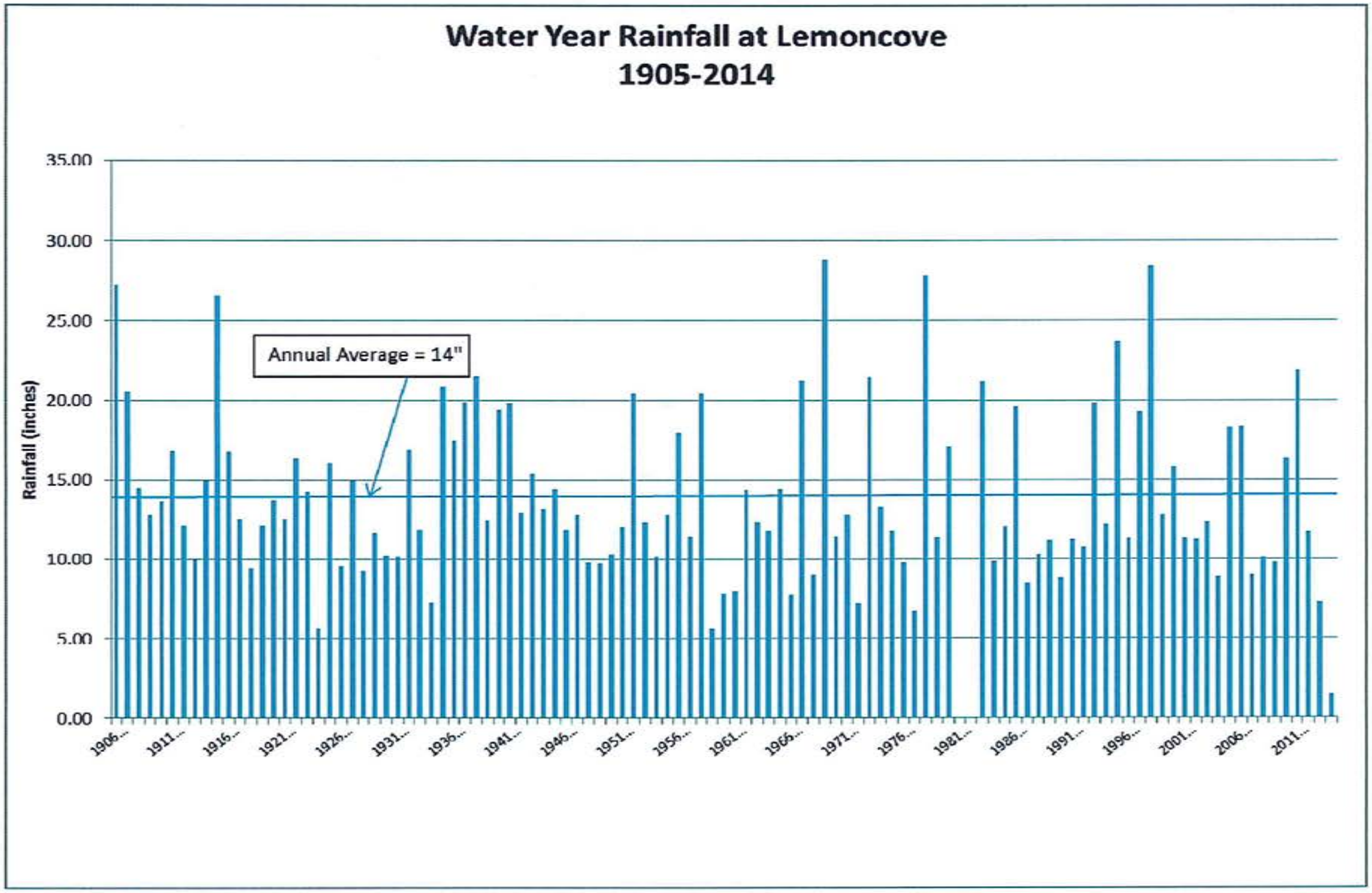

Figure 7. Rainfall at Lemoncove, 1905 through January 2014.

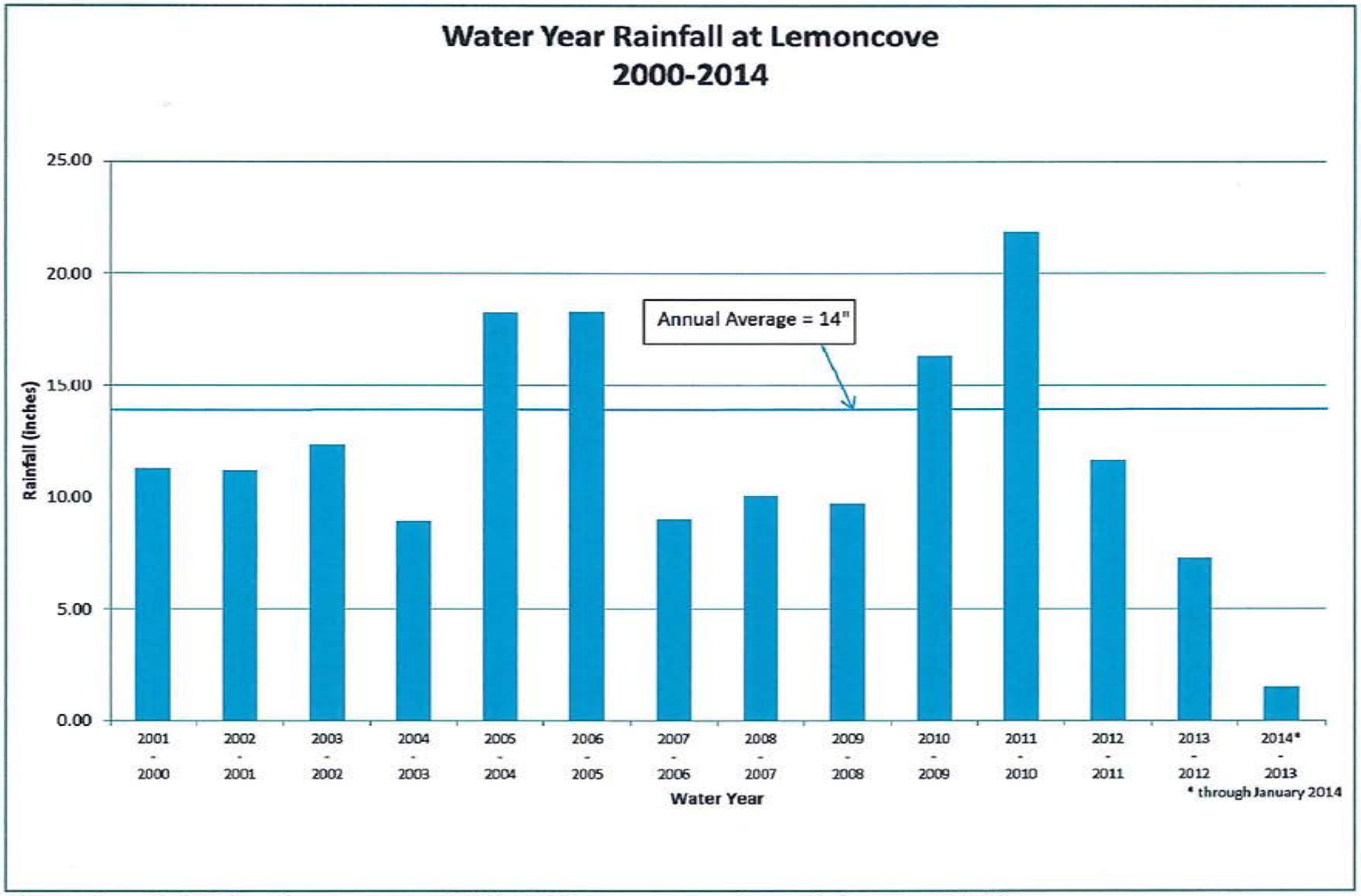

Figure 8. Rainfall at Lemoncove, 2000-2001 water year through January 2014.

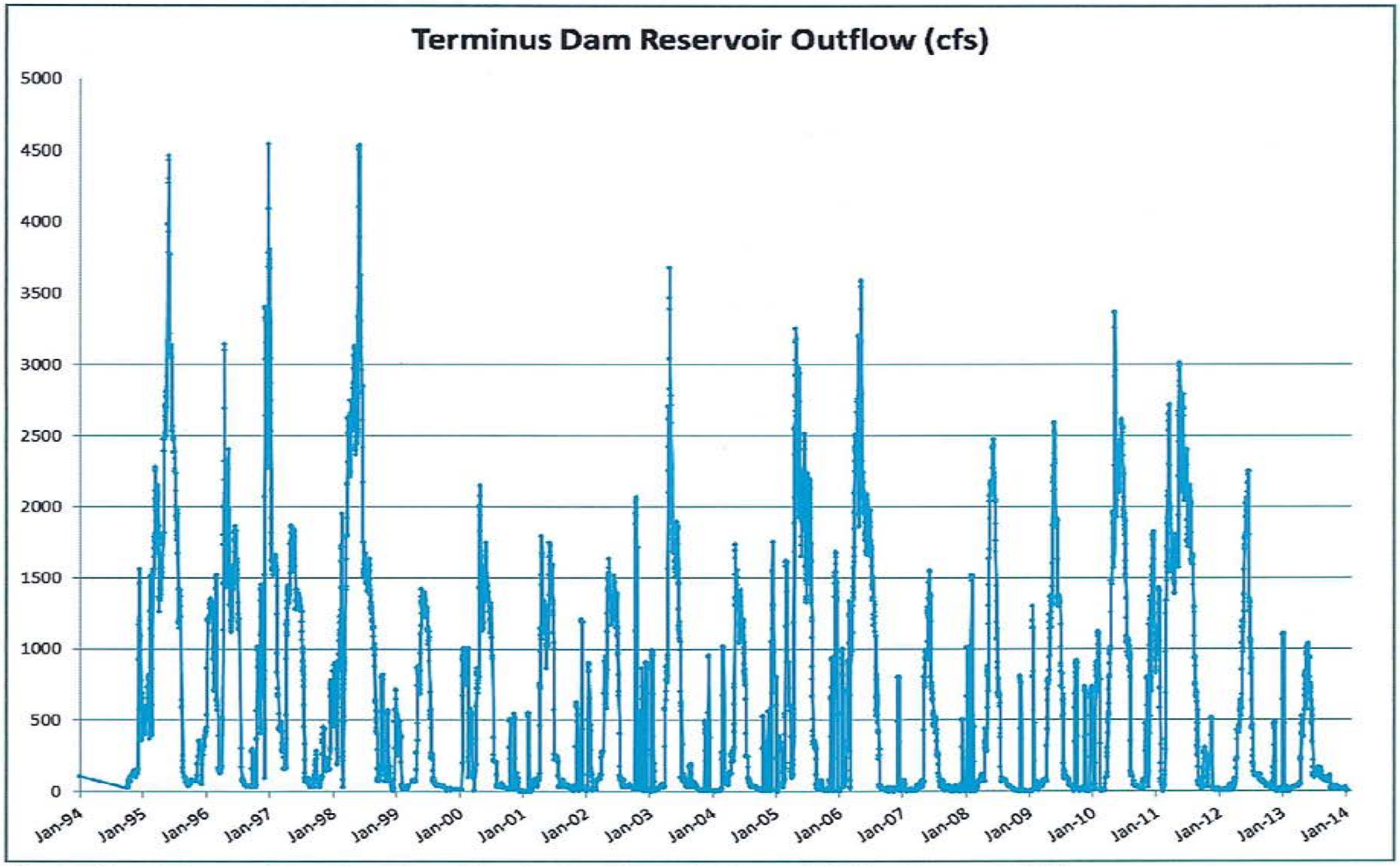

Figure 9. Releases from Terminus Dam to the Kaweah River, 1994 to January 2014.

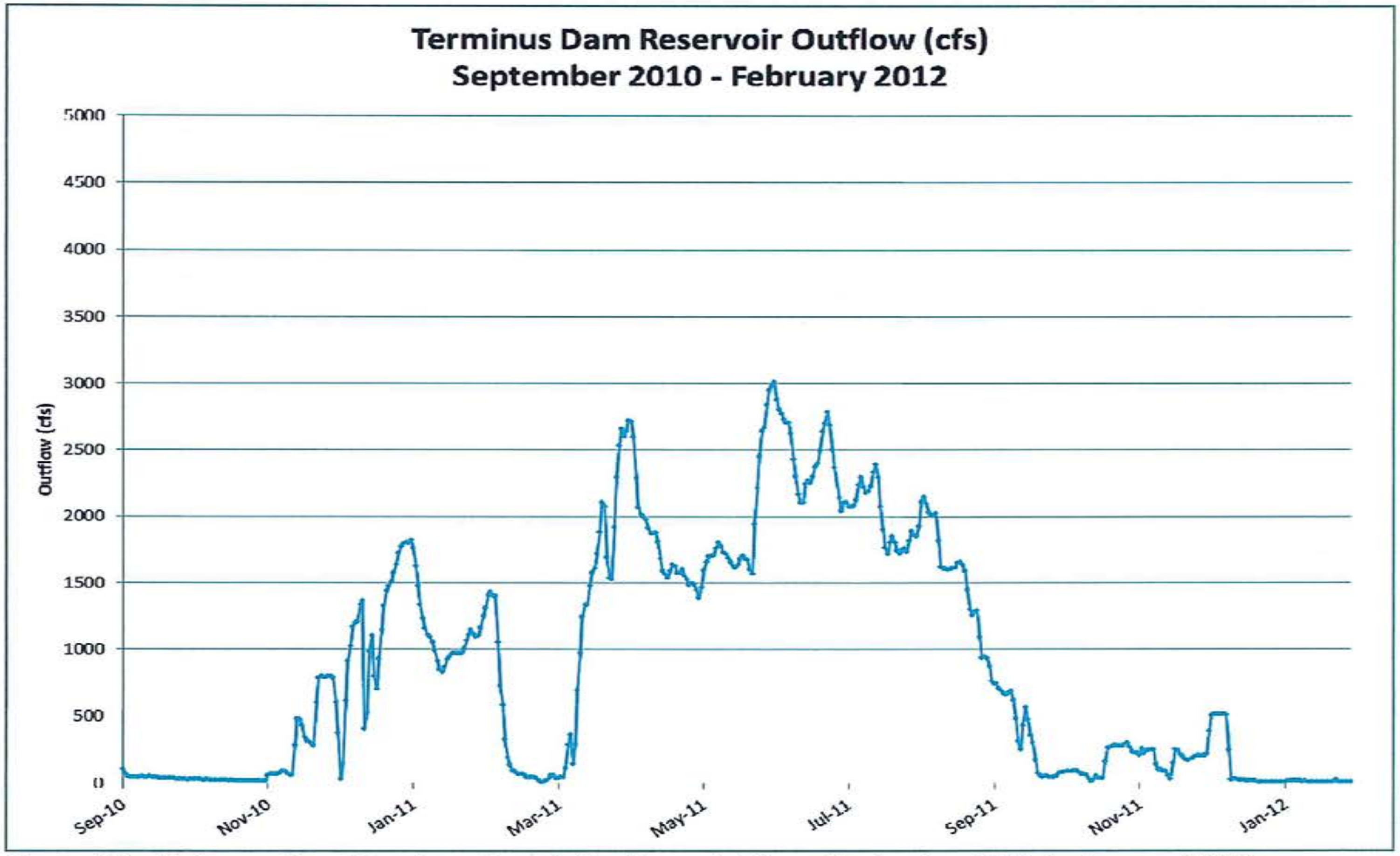

Figure 10. Releases from Terminus Dam to the Kaweah River, September 2010 to January 2012.

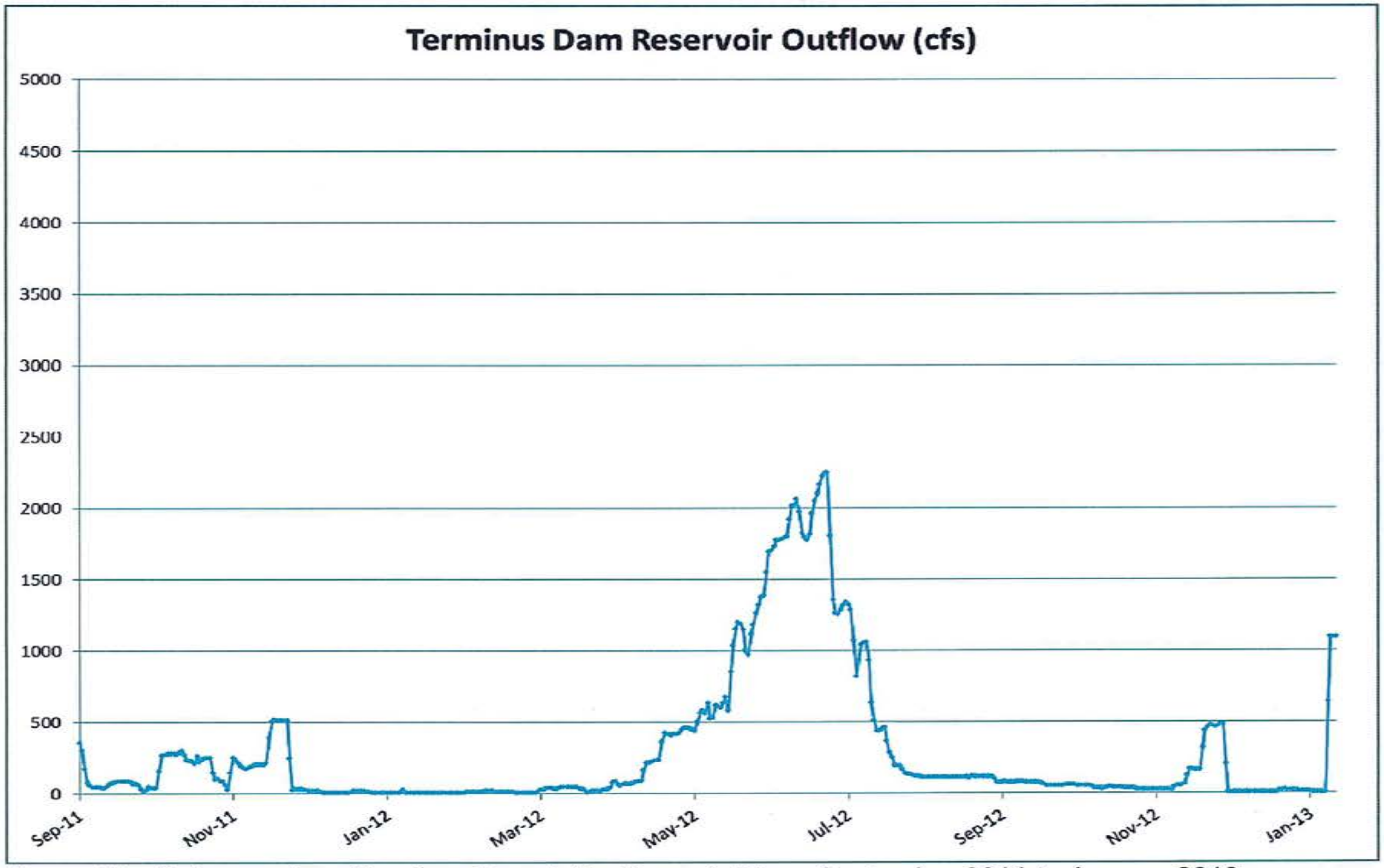

Figure 11. Releases from Terminus Dam to the Kaweah River, September 2011 to January 2013.

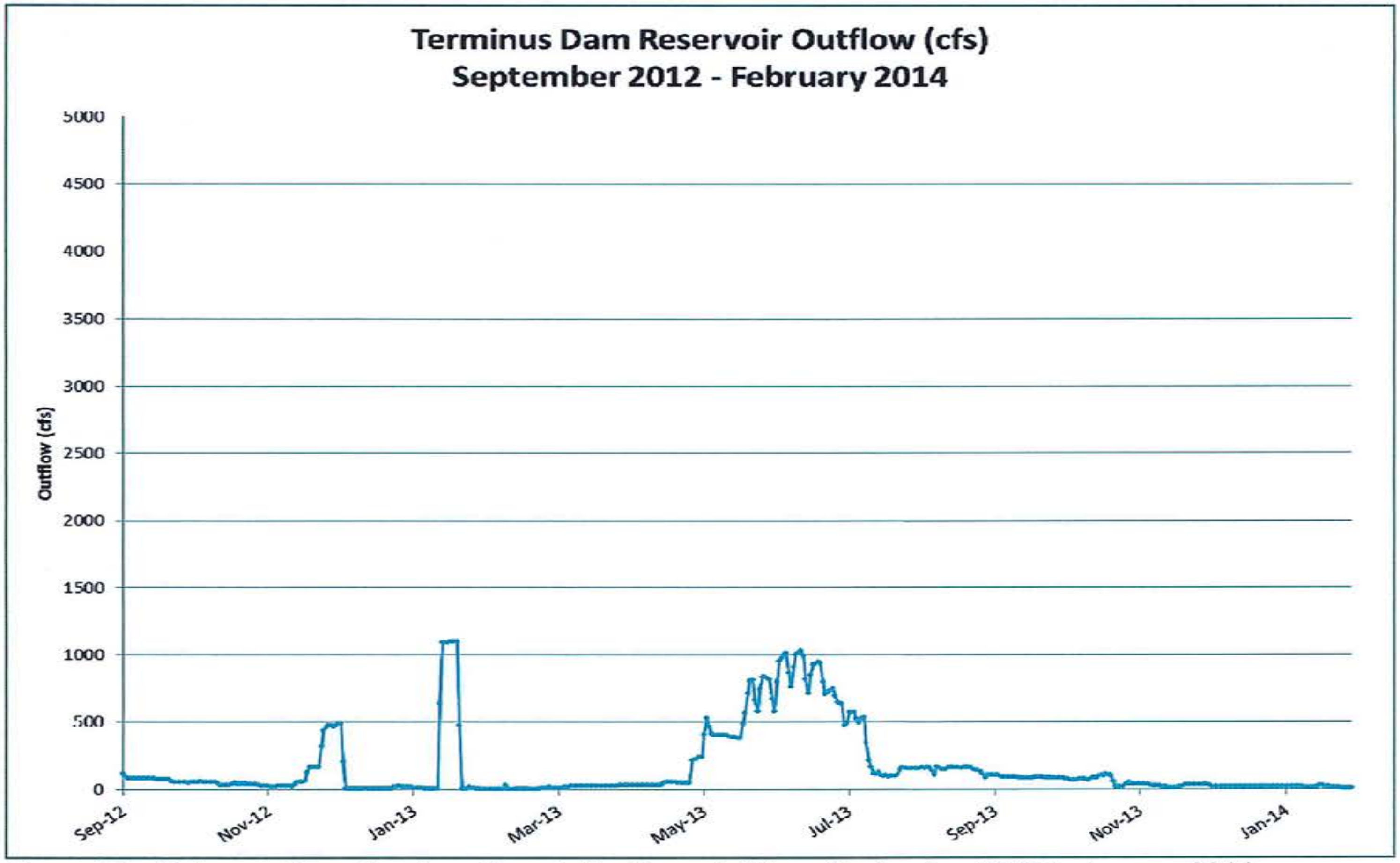

Figure 12. Releases from Terminus Dam to the Kaweah River, September 2012 to January 2014.

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Attachment 2

STATEMENT OF QUALIFICATIONS

Prepared for:

Tulare County

AUGUST 2014

Tully & Young
Comprehensive Water Planning

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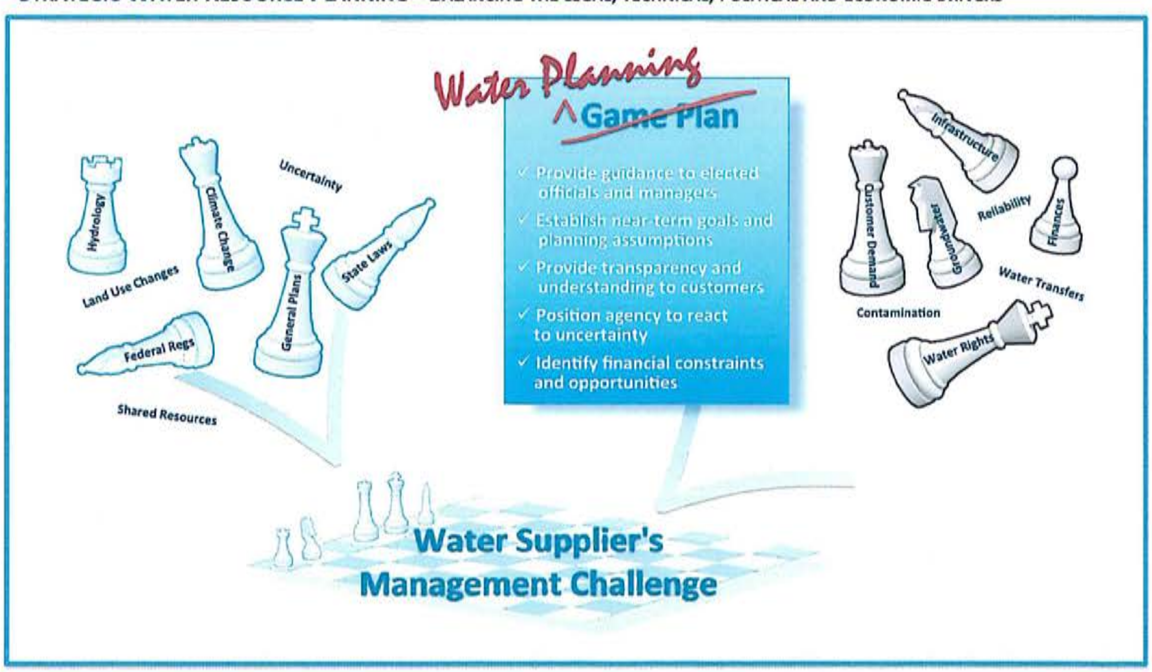
Introduction

Tully & Young thinks comprehensively. We artfully integrate legal, economic, political and technical elements into all of our water resource planning and management investigations. We assist our clients in seeking workable solutions that meet their fundamental water management objectives – whether resolving conflicts, preparing for future unknowns, or expanding value from existing and new water assets. We help our clients achieve these objectives through collaboration with other consultants, stakeholders, experts and the public – to ensure information is available at the necessary level of detail to identify, assess, and implement dynamic water resources management solutions.

Tully & Young brings its comprehensive water management experience to every client challenge. Like a game of chess, a water manager must be able to anticipate and counter the "moves" of local, regional, state and federal regulations; changes in natural hydrology, climate and groundwater conditions; regional competition and joint use of shared water resources; local and regional land use changes, developments, and plans; and project funding opportunities. (See **Figure 1**). Our experience helps our clients win this game. We have developed comprehensive water management plans; negotiated complex agreements; drafted and defended environmental, technical and legal documents; and assessed the legal, technical, political and economic underpinnings of projects and water transactions.

Figure 1 - Strategic Water Management - Balancing the legal, technical, political and economic drivers

STRATEGIC WATER RESOURCE PLANNING - BALANCING THE LEGAL, TECHNICAL, POLITICAL AND ECONOMIC DRIVERS



Experience and Expertise

Tully & Young has the experience, talent, and reliability that our clients need. We are a multi-disciplined water resources management and consulting firm with the relevant skill and experience to resolve multi-faceted water resource management issues.

Since our firm's inception, we have served over 50 different clients in California through hundreds of projects. Most of our clients have active projects within the last two years and always request that Tully & Young propose on follow-up tasks and new projects. Our repeat business with existing clients demonstrates our understanding of complex water management issues and the quality of our work. Quality work product is critical for our small business' survival.

Tully & Young synthesizes the legal, economic, political and technical elements that permeate all water resource management challenges.

Tully & Young's strategic water management experience includes regional, statewide, national, and international matters. We have worked on interstate and international water issues, California Delta and statewide planning issues, regional strategic planning, and private client planning and strategy development. Our experience spans California's four corners and transverses all levels of government and private business. The following pages detail the breadth and depth of our comprehensive water planning expertise.

Statewide and Regional Water Management

Tully & Young, Inc. has worked on water management issues that permeate every front in California's "water wars." For instance, our understanding of the Law of the River, California Bay-Delta issues, and regional strategic planning efforts are invaluable to all of our client's water management needs. As described below, we have a comprehensive understanding of the California's water policy drivers, water rights and regulations, technical water storage and conveyance system operations, and general water governance structure.

Comprehensive Understanding of Water Policy Drivers

As a starting point, Tully & Young has extensive knowledge and understanding of California's water policy drivers – with a prime example being the challenge to find lasting solutions to Bay-Delta issues. These drivers include maintaining statewide supply reliability, identifying and isolating stressors to the Delta ecosystem, managing land development and population centers, and maintaining fisheries and other regulated species and their habitats. Given diverse set of stakeholders, navigating and solving complex policy issues requires technical, legal and political acumen. Tully & Young, Inc. possess these skills and has been summoned to numerous Bay-Delta forums to help find solutions. And these skills are applicable to other interstate and regional efforts like our experience and work in the Colorado River (the Law of the River), the Klamath River, and the Truckee River.

Tully & Young's comprehensive understanding of California's water policy drivers was evident in its work for the Delta Vision process. Tully & Young, Inc. was the lead consulting firm in that effort. Gwyn-Mohr Tully and Greg Young "championed" Delta Vision stakeholder work groups, assembled and moderated panels at Delta Vision Task Force meetings, and developed workable goals and objectives for consideration by the Delta Vision Task Force, the public, and the California Legislature. Tully & Young's highly educated and experienced staff also assisted in developing Delta Vision documents and solutions.

Tully & Young's diverse client base and repeat client business in complex water planning issues is further testimony to our ability to understand the water policy drivers that affect water management actions. Tully & Young's clients have included: urban and agricultural water purveyors throughout California; urban, agricultural and environmental advocacy groups; State and Federal public agencies; and private corporations and individuals. We have addressed a myriad of complicated issues such as: assessing statewide water transfer policy, developing legislative and regulatory language, and developing solutions to govern the Delta. We are well versed in all of California's key water policy drivers.

Water Rights and Regulations

Tully & Young, Inc. possess a thorough understanding of California's water law and regulations. Often in policy and technical settings, the underlying legal and regulatory rules are misinterpreted or completely overlooked. Our experience in water transfers demonstrates how this oversight may arise. For instance, a water transfer requires that a seller have a transferable water right and that a buyer has the legal ability to use the seller's water right. Each type of water right or contract is subject to a different set of laws and regulations. These laws and regulations must be clearly understood in order to perfect the transfer in the appropriate regulatory setting. For instance, a groundwater substitution transfer based on a post-1914 appropriative water right requires a deep understanding of not only the SWRCB's water transfer process, but also on the through-Delta conveyance issues in the Delta, the operations of the State and Federal facilities in play, and the regulatory constraints on available groundwater supplies. Accordingly, a policy advocating water transfers must account for the legal and regulatory nuances that impact the practical issue of actually executing a water transfer. Tully & Young are experts in investigating and resolving these types of issues.

Tully & Young has examined and assessed water rights in nearly all of its projects. Besides providing an historical overview of California's water rights system for the Delta Vision project and writing an Amicus Brief in the California Supreme Court's *Barstow v. Mojave* case on the underpinnings of California water law, our firm has specifically examined all types of water rights and contracts in work with municipalities, agriculture interests, and many private clients throughout the Central Valley. Tully & Young has examined pre-1914 appropriative rights, riparian water rights, and State Water Resources Control Board issued appropriative rights. Tully & Young has also been asked to assist in facilitating SWRCB

Water Permit extensions and modifications in the context of ongoing urban water development projects.

Tully & Young has also examined Central Valley Project contracts, State Water Project contracts, the relevant law related to each (i.e. the Central Valley Project Improvement Act (CVPIA) and Reclamation Law), as well as the Colorado River Compact (i.e. "The Law of the River"), and conducted legislative history reviews of the San Luis Unit and the San Felipe Division as it relates to San Luis Reservoir construction and operations. And Tully & Young has examined the Coordinate Operating Agreement as it relates to integrated State and Federal water operations.

Tully & Young's unique and thorough understanding of water rights and regulations helps our clients further their technical and policy objectives.

In addition to the specific items mentioned above, Tully & Young has also researched the Reasonable Use Doctrine under Article X, Section 2 of the California Constitution and various regional water supply agreements such as the Water Forum Agreement in the American River Drainage that modifies reliability in underlying water rights and contracts. Tully & Young has investigated issues associated with the Public Trust Doctrine and Endangered Species Act as applicable to water rights in California.

Tully & Young is also well versed in the nuances of California's groundwater law as it applies to overlying users, groundwater appropriators, and underflow. Tully & Young has worked extensively on water rights issues with numerous local agencies with jurisdiction over groundwater in developing workable policy to better conjunctively manage all its water resources, including CVP contract supplies.

This detailed understanding of federal law and California water law is critical in assessing and implementing sound technical analyses and good water policy. Tully & Young uses its knowledge in this area to develop legally defensible technical documents that further our clients' policy objectives.

Technical Competence and System Understanding

Tully & Young's technical expertise complements its legal and regulatory expertise. In order to best help our clients develop and achieve their policy objectives, Tully & Young must fully understand the technical details of system operations and obligations – and understand these issues in the context of how other water interests operate to move water locally, regionally, and around the state. The uniqueness of Tully & Young is its ability to combine the technical expertise with the legal and regulatory expertise.

Tully & Young has developed a broad-based technical understanding of numerous water supply systems that allows rapid and effective application of technical information to our clients' problems. For instance, as part of the Delta Vision process, Tully & Young synthesized an extensive amount of technical data throughout the Delta watershed and developed a unique graphic (see **Figure 2** next page) to quickly represent the relative magnitudes and locations of water diversions throughout the state. Tully & Young's graphic has been adopted and used in numerous forums outside the Delta Vision process and has been defended in every application. For instance, Tully & Young was asked to assess further data and modify this graphic as part of the State Water Resources Control Board Delta Flow Criteria Hearings.

Tully & Young is also fully versed in demand and conservation analyses for both urban and agriculture demands. Tully & Young is active in implementing both the urban water conservation related to the 20 by 2020 rules as well as the agricultural conservation discussions relevant to SBx7-7. In the urban setting, this knowledge plays a vital role in helping clients prepare CEQA/NEPA compliant documents, assessing the reliability of water supplies under defined demand conditions, and adopting formal documents as required by state mandates, such as §10610 of the California Water Code, et. seq. (the Urban Water Management Planning Act). In the agriculture setting, this knowledge will help determine upstream supplies that can be made available from agriculture conservation practices, the application of these practices to water transfers, and the regulatory and policy infrastructure necessary to implement these actions. Furthermore, our technical understanding has been instrumental in helping the California Department of Water Resources develop new agricultural water measurement regulations and develop a methodology to quantify the efficiency of agricultural water use – both requirements of State legislation passed in November 2009 as part of the SBx7-7 statutes.

Our technical understanding of water issues is not limited to supply analyses and demand calculations. Tully & Young understands California's water conveyance system and the operations of that system in different year types under different hydrological and regulatory conditions. Our work with CALFED's surface water storage program, Santa Clara Valley Water District's Low Point Improvement Project, Reclamation's assessment of opportunities to participate in south-of-Delta water banking at Semitropic, and our execution of water transfers requires real-time, practical understanding of California's conveyance systems.

Figure 2 – Graphic created for the Delta Vision Blue Ribbon Task Force (source: 2007 Delta Vision Strategic Plan)

Figure 8. Upstream and Export Diversions from the Delta Watershed

Source: Greg Young, Tully & Young, Inc.

Specifically, for the CALFED surface storage program, Tully & Young facilitated the development of common assumptions to be used across the independent storage investigations – assumptions that were critical drivers in various water system models such as CALSIM II and LCPSIM. Absent these commonalities, each project was exposed to outside challenges about inconsistencies and misrepresentations in documents that were being used to assess enormous capital investments and to shape public policy. Tully & Young's understanding of California's conveyance system and operations will play an integral role in helping Reclamation assess workable solutions to complex water problems.

Tully & Young has also worked on technical issues that cross interstate boundaries. Our work with Imperial Irrigation District was essential in that District's effort to transfer water derived from the Colorado River. Moreover, our technical work with the City of Yreka and the Klamath River has helped facilitate the client's needs as the Klamath River Agreement and dam removal projects are developed and executed. And last, our experience with the Colorado River related to facilitating interstate water transfers between Upper Basin States and Lower Basin States under the entire body of law know as "The Law of the River" aided the Southern Nevada Water Authority's strategic planning efforts.

Water Governance

Tully & Young is well versed in the complexities of water governance throughout California and the West. As the authors of the Delta Governance context memo that was developed for the Delta Vision Blue Ribbon Task Force, and as the "champion" of the Delta Vision stakeholder work group on Delta Governance, Tully & Young holds an understanding of governance issues that most other consulting firms do not possess. Tully & Young's work on Delta Governance in the Delta Vision process was the underlying work product that resulted in the adopted legislation SBx7 1 – which created the Delta Stewardship Council and Delta Plan. Many elements included in the legislation reflect the recommendations of the Delta Vision Blue Ribbon Task Force as presented in their 2008 Delta Vision Strategic Plan.

The governance recommendations in the Strategic Plan reflected the coordinated efforts of numerous individuals as part of the Governance group. The concept of the Delta Plan – the cornerstone of the governance structure – was developed by Gwyn-Mohr Tully and Mr. Byron Buck. The idea of the Delta Plan as a central governing document for Delta activities (and the 130 other public agencies in the Delta) was the primary component of the Legislature's development of a new governance scheme. In addition, Tully & Young investigated the authorities of the proposed governance structure under the Coastal Zone Management Act and other Federal and State laws. Tully & Young also helped define the powers and limitations of the Delta Stewardship Council as well as the structure and functions of the Delta Conservancy.

Though Tully & Young has a deep understanding of Delta governance, it also possesses complimentary understanding of the other governance issues impacting the California and the West. For instance, Tully & Young has tracked developments under the Endangered Species Act and the Wanger decisions that have fueled participation in the BDCP and the State Water Resources Control Board Delta Flow Criteria. Tully & Young has also tracked developments related to expansion of the Primary Zone in the Delta and the implications that this expansion may have in undertaking broad-based conveyance changes. And Tully & Young assessed the water supply opportunities related to mitigation efforts associated with the BDCP efforts. This sampling of issue directing and monitoring water governance activities illustrates Tully & Young's understanding of the governing complexities that impact Reclamation's water supply reliability and conveyance.

Local and Project-Specific Planning and Implementation

Local and project-specific planning and implementation projects require a blend of expertise of local, regional and statewide elements and issues. Tully & Young's broad legal, political, and technical experience in this area best serves our clients' ongoing needs.

Planning Compliance Documents

As previously illustrated in **Figure 1**, strategic water resource planning is like a game of chess – the water manager must be able to anticipate and counter the regulatory and climatological "moves" in the game. By preparing comprehensive planning documents for local and regional agencies, such as an Urban Water Management Plan (UWMP), and developing innovative strategies (e.g. a Water Asset Management Strategy), a water purveyor can better evaluate new opportunities, position itself to respond to a dynamic water planning future, and financially gain from its water assets.

Tully & Young specializes in preparing water planning documents and evaluating water assets. As an example, the UWMP can provide a manager with a reliable game plan that can be confidently referred to over and over as the conditions in the water management game change while simultaneously positioning the water purveyor to leverage water assets for financial gain. In this context, a good UWMP will not only meet DWR's "check-the-box" requirements, but also establish long-term water planning assumptions and goals, secure water rights and contracts, and empower the District to manage the dynamic nature of water supplies and demands – especially as applied to long-term water conservation planning. In addition, well-thought planning and well-drafted documents position the District to potentially leverage water assets for financial benefits and to obtain project funding from a variety of sources (not just State grant funds).

Tully & Young also specializes in researching and developing technical documents that support CEQA and NEPA – from addressing the California Supreme Court's ruling in *Vineyard Area Citizens for Responsible Growth v. Rancho Cordova* in water impacts analyses in CEQA/NEPA documents, to providing legally supportable analyses to assist with Specific Plans, General Plans and other CEQA-specific activities. For instance, Tully & Young specializes in drafting SB 610 Water Supply Assessments in accordance with Water Code Section 10910, et seq. These assessments must be developed by water purveyors in accordance with the legal requirements and also provide the baseline technical assessment for a land use agencies' environmental impact analysis for a specific project's water supply. Several court cases, including *Center for Biological Diversity v. County of San Bernardino*, have reinforced the need for SB 610 Water Supply Assessments for small projects and developments. Tully & Young's in-depth understanding of the SB 610 Water Supply Assessment law as related to CEQA projects is unique and comprehensive.

In short, Tully & Young understand the minutia and nuances of the water management game and we assist our clients in addressing the game's numerous legal and technical plays. Our understanding of not only the CEQA/NEPA requirements and documents but also the links those documents have to other external documents, technical evaluations, and political actions are unparalleled in the water consulting business.

Water Transactions

Tully & Young's understanding of water rights also helps facilitate water transfers. Tully & Young has successfully implemented numerous water transfers that have provided financial gain for our clients. For instance, our understanding of the nuances of CVP Contract water rights and Reclamation law allowed a client to transfer CVP water in a hydrologically wet year with very little regulatory approvals and interference even when their counsel advised "it was impossible." The use of provisions in the CVPIA helped fast-track the transfer to in-watershed users and provide real dollars to our client.

Tully & Young has helped other clients transfer their water supplies under various forms of water rights and through convoluted regulatory structure and complex conveyance system. We have facilitated groundwater substitution transfers, reservoir reoperation transfers, and instream flow dedications.

Our relationships with state and federal personnel and with potential buyers as well as our understanding of the water transfer regulations allowed us to facilitate a water transfer for Sacramento Suburban Water District in 2009, 2010 and again in 2013 – the first conjunctive use water transfer from an urban purveyor in California's history. Typically spanning six to nine months from the decision by a seller to proceed to the start of a transfer, our experience and relationships kept the process moving toward success for both the buyer and the seller.

Tully & Young team's comprehensive understanding of water rights and the regulatory nuances has helped our client's maximize the asset value of their water resources.

Project Experience

Since our founding in 2004, we have been involved in numerous strategic water management efforts ranging from those with statewide and interstate implications to those with a primarily local focus. This wide-ranging experience and understanding is vital to aid our clients in the water management and planning endeavors. As illustrated in **Figure 3**, Tully & Young has comprehensive experience related to all types of strategic water planning activities. This experience, gained from drafting and defending documents, to performing fatal flaw analyses to understand the usefulness and potential vulnerabilities of existing data and public documents, gives us a unique understanding of the importance of drafting a good technical planning documents.

Selected Reference Projects

The following selected references highlight the land use and water supply integration that is critical to successful water management planning. An abbreviated listing of other clients and projects is included following these referenced projects to demonstrate the range of clients and projects served by Tully & Young.

2005 and 2010 UWMP, SB 610s, Water Supply Management Strategy – City of Folsom

Over the past six years, the City of Folsom hired Tully & Young to conduct extensive water supply and demand investigations, prepare various documents to support policy decisions and CEQA compliance, and assist with various complex water-related negotiations and water transfers. Through various efforts, we have researched the City's pre-1914 water rights, CVP contract supplies, obligations under regional water supply agreements, local agency contract supplies, the potential for reuse under existing state law and acquisition of new supplies to meet growing demands. We have recommended and implemented strategies for EIR/EIS compliance in the context of project developments and are guiding internal effort to develop the 2010 UWMP. We assisted in the identification and acquisition of new supplies to meet development needs and legal requirements. We are still active in major project development including conjunctive use projects, legislative advocacy, and long-term regional planning.

Strategic Planning and Support Services – Delta Vision Blue Ribbon Task Force, California Resources Agency

Tully & Young was recruited as the lead consultant team to assist the Delta Vision staff with preparing topic-specific context memos for presentation to the Delta Vision Blue Ribbon Task Force. During 2007, we drafted two iterations for each of the following context memos: (1) Sustainability, (2) Delta Water Management Governance Structure, and (3) Water Supply and Water Quality. Additionally, we were requested to assist with an array of tasks including (1) assembling and moderating panels in front of the Task Force, (2) identifying critical policy issues, (3) reviewing and objectively assessing stakeholder comments on early drafts of the Delta Vision, (4) preparing objective, informative white papers to help with policy direction decisions, and (5) preparing several technical graphics included in the final Delta Vision documents.

Figure 3 - Strategic Water Planning Project Experience

Water Planning and Related Experience

	Elements of an UWMP												
	Comprehensive demand determination and projections	Review of water rights, contracts and agreements	Evaluate water supply reliability under normal and dry conditions	Supply and demand integration for normal and dry years	Develop and evaluate demand management measures	Develop and evaluate new supply options (recycle, desal, transfers)	Develop policies and temporary shortage provisions	Conservation opportunity assessment and quantification	NEW Per-capita baseline determination and 2020 target identification	Integrate legal, technical, political and economic elements	Prepare compliant UWMP, SB 610 WSA or General Plan WSE documents, or GMPs	Comprehensive fatal flaw analysis of existing UWMPs, GMPs, engineering and planning documents	Summarize Water and Gov't code statues and case law in concert with legal team
Sacramento Hydrologic Region													
City of Folsom	●	●	●	●	●	●	●	●	●	●	●		●
City of Yreka	●	●	●	●		●		●	●	●	●		
Placer County Water Agency	●	●	●	●	●			●	●	●	●		
City of Oroville	●	●				●				●		●	
City of Colusa	●	●	●	●	●		●	●		●	●		
City of West Sacramento		●	●			●	●			●		●	●
Carmichael Water District	●	●	●	●	●	●	●	●	●	●	●		●
Amador County Water Agency	●	●	●	●	●	●	●	●		●	●		●
South Feather Water and Power		●											
Sutter Pointe (for Sutter County)	●	●		●	●	●	●	●		●	●		●
El Dorado Irrigation District	●	●	●	●	●			●		●	●	●	
Foster Enterprises	●	●	●		●	●	●			●			
Sacramento County Water Agency		●	●	●								●	●
City of Lincoln	●	●	●	●	●	●	●	●	●	●	●		●
San Joaquin Valley													
City of Taft	●	●	●	●	●	●	●	●		●	●		
West Kern Water District		●	●	●	●	●						●	
Buena Vista Water Storage District		●											
City of Lathrop	●	●	●	●	●	●	●	●		●		●	●
City of Manteca			●	●	●								
Bakersfield Metro Area/City of Bakersfield	●	●	●	●						●	●	●	●
California Water Services Company		●										●	
East Niles Community Services District		●										●	
North of the River Municipal Water District		●										●	
County of Tulare	●	●	●	●	●		●			●	●	●	
Oildale MWC. Vaughn MWSC, Lamont PUD		●										●	
KCWA I.D. 4		●										●	
Kern Delta Water District		●											●
County of Madera	●	●	●	●	●	●	●	●		●	●	●	
City of Fresno			●										
City of Clovis			●										
Semitropic Water and Storage District		●								●			●
Other Regions													
City of Cloverdale	●	●	●	●	●					●	●		
City of St. Helena	●	●	●	●						●	●		
Sonoma County Waste Management Agency		●	●	●							●		
City of Hollister		●			●							●	
San Benito County Planning/SBCWD		●			●						●		
Santa Clara Valley Water District		●	●	●	●	●	●			●			●
Sunnyslope County Water District	●	●	●	●	●	●	●	●		●	●		●
White Rock Club		●											●
Grenada Irrigation District	●			●	●								
Various State and Regional Entities and Organizations													
Northern California Water Association													●
Sacramento Area Council of Governments	●	●		●				●		●			●
California Farm Bureau Federation													●
The Nature Conservancy	●	●								●			●
City of Sacramento (Water Forum)		●	●									●	
U.S. Bureau of Reclamation										●			
California Resources Agency (for Delta Vision)			●	●	●	●	●	●		●			●

By Spring of 2008, Greg Young and Gwyn-Mohr Tully were selected as "technical support leads" for two of four critical work areas for the Delta Vision Strategic Plan development: Water Supply and Reliability, and Governance and Strategic Finance. In this capacity, Mr. Young and Mr. Tully led stakeholder workgroups, directed fact-finding, testified before the Governor's Delta Vision Blue Ribbon Task Force, and drafted portions of each of the four draft strategic plans prior to the Task Force's final document.

2010 UWMP, IRWP Update, and Water Rights EIR Support – Placer County Water Agency

Tully & Young was hired to prepare a multifunctional Urban Water Management Plan (UWMP) that integrated the objectives of state-mandated UWMP statutes with efforts to protect existing water rights while also anticipating the dynamic future of multiple retail agencies. An important element of the work was to provide a supportable basis for future demand conditions, incorporating growth forecasts and new mandated conservation requirements. These future demands became the foundation for protecting water rights in PCWA's effort to extend a critical water right permit. Tully & Young's continued work integrating the legal, political and technical elements of the Integrated Regional Water Plan, and the UWMP into the EIR effort help PCWA strategically plan and manage limited resources to meet an ever-expanding population.

Water Asset Marketing Strategy – Sacramento Regional County Sanitation District

Tully & Young's expertise in water rights and water transfers was instrumental in leading a high-caliber team – CH2M Hill, AECOM and WestWater Research – chosen by the District to develop a strategy to find value in existing and future treated wastewater effluent. Tully & Young has led the District's team to define opportunities, frame issues related to plausible transfer opportunities, and understand potential impacts that may lead to restrictions in such opportunities. With a multifaceted vision to sustain regional water supplies, benefit current and future ratepayers and enhance the environment, Tully & Young is guiding the District through a complex and unprecedented area, allowing the District to work toward its ultimate goal – financial gain from its water assets.

Water Supply and Demand Evaluation – Bakersfield Metropolitan Area

Tully & Young was asked to prepare a water supply and demand analysis to support the Bakersfield Metropolitan Area's General Plan Update that covered the entire City of Bakersfield as well as large urban and agricultural lands in Kern County. Tully & Young synthesized the water supply picture in the region that included over 30 different water entities from groundwater storage districts to retail water agencies. We analyzed and integrated numerous UWMPs and other planning documents in conducting the investigation. We provided the client with a detailed picture of the current and future regional water situation as well as an analysis of future water supply issues that may implicate long-term water supply reliability in the Bakersfield Metropolitan Area – especially as it related to availability of State Water Project contract supplies. Our assessment included an evaluation of dry year issues and water right vulnerabilities.

Santana Ranch SB 610 WSA – Sunnyslope County Water District, San Benito County

Tully & Young prepared a compliant Water Supply Assessment to accompany the Specific Plan being completed for a 300-acre development just east of Hollister, California. As part of this work, Tully & Young completed regional groundwater conditions analyses, prepared Central Valley Project (CVP) water supply reliability analyses, and analyzed the water supplies and demands of other planned developments to objectively assess the sufficiency of water supplies for the project. A critical aspects of this work included reviewing the data and assumptions included in the City of Hollister UWMP to determine congruence or variations from assumptions and characterizations of the regional water supply and demand conditions. Tully & Young's assessment of the reliability of the CVP water supply in the context of the groundwater conditions in the region was instrumental in the SB 610 WSA analysis. Tully & Young was also instrumental in preparing the water analysis in the project level EIR for the development and responding to comments.

Austin Quarry SB 610 Water Supply Assessment – Vulcan Materials, Inc.

Tully & Young prepared an SB 610 WSA for a new quarry operation in the Central Valley. This WSA addressed the adequacy of surface and subsurface water supplies as well as quarry operational demands. In addition, we assisted the client in assessing the reliability of water supplies and integrating the water supply analysis into the project EIR in compliance with the California Supreme Court's *Vineyard* decision. This project is still ongoing.

Carmichael Water District - Water Management Strategy and 2010 UWMP.

Tully & Young was hired by Carmichael Water District to conduct a complete overview of the District's water rights and asset opportunities. The Project included assessing all of the legal nuances associated with the District's numerous water rights, assessing technical issues that affected the legal issues, and advising on the uses and marketability of the District's water assets. Tully & Young also completed the District's 2010 UWMP as part of this analysis. This project is still ongoing.

Site 40 Compost Facility SB 610 Water Supply Assessment – Sonoma County Waste Management Agency

With recent court rulings clarifying the trigger for completing a SB 610 Water Supply Assessment, the Sonoma County Waste Management Agency determined the need to prepare an assessment for a proposed 50 acre green-waste composting facility. Tully & Young was selected to support the EIR consultant and prepare the WSA. Unique circumstances involving historic water rights, limited groundwater and availability of recycled water required a comprehensive strategy to be developed on the planned water supply and the subsequent analysis of impacts of supply alternatives in the accompanying EIR. Tully & Young led the strategy development, outlining the varied degrees of risk under differing scenarios and assisted the EIR consultant in identifying and evaluating supply alternatives.

Other Experience

In addition to the specific project references above, the list below further indicates our breadth of experience that benefits each of our future clients.

- *El Dorado Irrigation District*: Four separate Water Supply Evaluations, one each for the Village of Marble Valley Specific Plan, the Lime Rock Valley Specific Plan, the Central El Dorado Hills Specific Plan and the Dixon Ranch Residential Project
- *Lewis Operating Corp*: Water Supply Evaluation to support CEQA documentation for Arboretum Specific Plan (bridging County-supplied SB610 WSA)
- *County of Madera*: Gunner Ranch Project SB 610 WSA
- *Amador Water Agency*: Wicklow Way SB 610 WSA
- *Lennar Homes*: Sutter Point SB 610 WSA
- *Department of Water Resources*: Upper San Joaquin River Storage Investigation – Conjunctive Use Opportunities; and Technical Support for Agricultural Water Use Efficiency Provisions under SBx7 7
- *City of Taft*: General Plan EIR Water Supply Evaluation
- *City of West Sacramento*: 2010 through 2014 Water Transfer Services and Water Management Strategy Consulting Services
- *Bureau of Reclamation*: Mokelumne River Water Storage and Conjunctive Use Project (MORE Project)
- *Sacramento Area Water Forum*: Dry-year Implementation Procedures
- *Santa Clara Valley Water District*: San Luis Low Point Improvement Project; Groundwater Management Strategy; and Proposition 218 Implementation
- *The Nature Conservancy*: San Joaquin River Migratory Bird Habitat Project; Cosumnes River Pre-Wetting Project; Water Rights Reporting and Filings; and Shasta River and Mill Creek water rights investigations
- *Numerous public and private clients*: Assistance with water supply and demand issues, opportunities in General Plan Updates and Specific Plan CEQA compliance analyses, and water transfers including (but not limited to): County of Tulare, City of Yreka, City of Cloverdale, City of Colusa, City of Oroville, Sacramento Regional County Sanitation District, Richland Planned Communities, SunCal Companies, AKT, Lennar, Gunner Ranch, The Charles Orwick Trust, Williams and Chunn Ranch, White Rock Club, Mohr-Fry Ranches, Smith Family Trust, Bear Creek Association and Granite Construction Company.

Greg Young, P.E.

Distinguishing Qualifications

- Co-founder of Tully & Young, Inc.
- Extensive expertise in water resource planning and engineering
- Leader in water supply assessments
- Valued collaborator and strategic advisor

General Experience and Qualifications

Mr. Young is a registered civil engineer with over 23 years of extensive experience in strategic water resource engineering and planning. Mr. Young has spent much of his career helping clients develop workable solutions that meet their fundamental water planning objectives. Mr. Young's experience and skill gained from his extensive work throughout California on projects ranging from the Delta Vision Blue Ribbon Panel (a state legislated body) and the CALFED Bay-Delta Program to first-in-kind urban conjunctive use water transfers, enables development of creative and comprehensive solutions. Mr. Young provides expertise to local water purveyors, municipalities, non-profits and private interests on a range of matters from water management strategies to UWMPs, to aiding clients with the purchase or sale of water assets.

Specific Project Experience

Principal, 2010 UWMP and IRWP Update for Placer County Water Agency, Auburn, California. Leading efforts to prepare a multifunctional Urban Water Management Plan (UWMP) that integrates the objectives of mandated UWMP statutes with efforts to protect existing water rights while anticipating the dynamic future of multiple retail water agencies. As technical lead, focus was directed on providing a supportable basis for future demand conditions, while incorporating growth forecasts and conservation requirements.

Project Manager, Semitropic Phase II Groundwater Banking Project, Sacramento, California. Directed Reclamation project to evaluate federal participation in a proposed groundwater banking project in the Tulare Basin. Facilitated multi-party party work sessions to define project attributes, address constraints, and negotiate modifications. Prepared and directed completion of a Special Study to document answers to questions raised in Phase 1.

Principal Strategist, Moderator, and Author for Delta Vision, Sacramento, California. Acting as technical lead for strategic planning efforts associated with water supply and reliability. Drafted and developed technical materials and memorandums to support the Delta Vision Blue Ribbon Task Force, moderated panel discussions, provided strategic assistance to Delta Vision staff and management, and led development of materials for the 2007 Delta Vision and 2008 Strategic Plan, including defining an array of options to improve water supply portfolios and improve water supply reliability throughout California.

[more…]

Active Registration

Registered Engineer: CA

Education

B.S., Agricultural Engineering, California Polytechnic State University, San Luis Obispo 1990

Relevant Experience

- Synthesizing hydrology, engineering, law and policy
- Coordinating and facilitating complex water management and planning efforts
- Comprehensive understanding of agricultural water use and trends
- Policy assessment and development
- In-depth technical understanding of California water facilities and management
- Extensive knowledge and application of State water rights, CVP law and various applicable regulations
- Successful water transactions
- SB610 Water Supply Assessments and UWMPs

Project Manager, CALFED Surface Storage Investigation's Common Assumption Effort, Sacramento, California. Led a multi-year, multi-agency effort to establish common baseline conditions, tools, policies, and protocols for the multiple individual surface storage investigations underway by state and federal water agencies.

Principal Strategist and Author, Tulare County General Plan Update and EIR, Visalia, California. Provided strategic policy development and primary assessment of supply and demand conditions to form the basis for environmental analysis of contemplated land use and policy changes. Developed new water management policies for adoption by the County. Presented analyses and findings at workshops for the County Board of Supervisors, the Planning Commission, and the Water Commission

Project Manager, Water Asset Marketing Services, Sacramento County Regional Sanitation District, Sacramento, California. Provided strategic policy development and primary assessment of water marketing opportunities; manage multi-team investigation into large-scale long-term water sales; lead efforts to identify opportunities, model impacts, obtain agreements and successfully complete future transactions.

Project Manager, 2009, 2010 and 2013 Short-term Water Transfers, Sacramento Suburban Water District, Sacramento, California. Formulated protocols and quantification methods for first-of-its-kind urban conjunctive use transfer. Worked closely with DWR and SWRCB staff to shepherd each year's temporary transfer through extensive oversight and approval processes.

Program Manager, SB 610 Water Supply Assessments, El Dorado Irrigation District, Placerville, California. Led development of required water planning documents, working directly with the water purveyor, the land-use authority and the developers to assure consistency in project descriptions, use of foundational assumptions, and overall analysis. Shepherd through approval process, including Board presentations and staff reports.

Lead Consultant, CALFED Water Transfer Program and Water Conservation Program, Sacrament, California. Led efforts to define and assess two separate CALFED program areas: Water Transfers and Conservation. Tasks included facilitating all stakeholder outreach, developing technical appendices and crafting elements for inclusion in the Programmatic EIR/S Record of Decision in 2000.

Attachment 3

Subject: CEMEX Stillwell Dewatering and Recharge Trench Pumping Rates

Date: Tuesday, August 12, 2014 2:20:50 PM PT

From: Andrew Kopania

To: Michael Spata, Aaron Bock, Charles Przybylski, Greg Young

CC: GordonBrown, pete.locastro@cemex.com, Ron Wilson, Mitchell Pat, Allison Reynolds

Michael and Greg:

Attached please find the documentation that we have compiled regarding the rates of dewatering and pumping to the recharge trench at the CEMEX Stillwell site. We are also in the process of preparing all of the water-quality testing documentation. Last week all of the well locations were surveyed by a licensed surveyor and I will be preparing groundwater contour maps as soon as we complete a new base map using the surveyed coordinates.

Please do not hesitate to contact us if you have any questions on the attached information.

Sincerely,
Andy Kopania
EMKO Environmental, Inc.

EMKO Environmental, Inc.
551 Lakecrest Dr.
El Dorado Hills, CA 95762-3772
(916)939-0133
akopania@sbcglobal.net

MEMORANDUM

August 12, 2014

To: Michael Spata, Tulare County RMA
Greg Young, Tully and Young

Cc: Aaron Bock, Tulare County RMA
Charles Przybylski, Tulare County RMA
Gordon Brown, CEMEX
Ronald Wilson, CEMEX
Pete LoCastro, CEMEX
Pat Mitchell, Mitchell Chadwick

From: Andy Kopania

Subject: Recharge Trench Operation and Water Discharge Volumes
CEMEX Stillwell Mine

This memorandum provides a discussion of the operation of the recharge trench at the CEMEX Stillwell Mine. This information has been summarized from available records based on the information request in the July 24, 2014 electronic mail message from Aaron Bock and our meeting and teleconference on August 4, 2014. The following documents are provided as attachments to this memorandum:

1. Summary of Southern California Edison electrical usage records for the pump(s) used to provide water to the recharge trench (file name: RMC Pacific Usage History 2003 to Present.pdf).
2. Pump size and flow rate information from the pump supplier (file name: Pump Size and Flow Rate email.pdf).
3. Performance curves for the installed pump (file name: Tsurumi 30hp KRS-822 pump performance curve and data.pdf).
4. Table 1 showing the conversion of the monthly kilowatt-hours (KWH) billed to hours operated and total gallons pumped to the recharge trench (file name: Water Pumped to Recharge Trench.xlsx).

Dewatering of the Stillwell Mine and discharge to the recharge trench began in August 2003 with sporadic operation through 2005, based on the electrical usage records. Continuous dewatering and discharge to the recharge trench occurred from January

2006 until June 17, 2013, when the wiring to the pumps was stolen. The wiring was replaced and the pumps restarted on June 21, 2013. The wiring was stolen a second time on September 4, 2013. Dewatering of the mine and discharge to the recharge trench has not occurred since September 4, 2013.

The pump motor is 30 horsepower (22 KW). The pump was selected to discharge 1,000 gallons per minute (gpm) to the recharge trench, based on approximately 70 feet of total head, at an efficiency of 62 percent. A second identical pump was added in November 2011. Both pumps were operated off the same electrical meter.

According to CEMEX personnel, water pumped into the trench would percolate into the subsurface. Water did not discharge to the land surface at the southwest end of the trench. The attached Table 1 (file name: Water Pumped to Recharge Trench.xlsx) presents the billed KWH for each month, the equivalent hours of pump operation, and the calculated total gallons of water pumped into the recharge trench each month. Use of electrical usage records provides an estimate of the water quantities pumped, but due to uncertainties in the actual head and efficiency in the field the quantities are approximate. However, the variation in KWH billed is an accurate representation of the magnitude of the variation in water pumping from month to month.

Due to heavy rainfall in early 2011[1], a portable diesel-fueled water pump was used to dewater the mine excavation from January 2011 through April 2011. According to CEMEX personnel, the diesel water pump was operated 24 hours per day, 6 days per week at a rate of 600 gpm. Water from the diesel water pump was discharged to a historic aggregate mining pit, referred to as the North Pond, which is located to the northwest of the existing mine excavation. Water from the diesel pump was not discharged to the recharge trench and there is no surface connection that would allow water from the North Pond to flow into the recharge trench. Water removed from the mine excavation by the diesel pump is not included in the monthly totals presented in Table 1.

Pumping from the mine excavation is conducted to meet the dewatering needs of the mining operation. During periods of low groundwater elevations, or when mining was not occurring below the groundwater table over a large area, the rate of dewatering was relatively low or zero. During periods when groundwater elevations were high, or there was excessive precipitation, the rate of dewatering was relatively high.

[1] The 2010-2011 water year had the seventh highest rainfall total recorded at Lemoncove since 1905. The rainfall total of over 21.8 inches was more than 150 percent of the long-term annual average of 14 inches. See Figure 7 of the February 26, 2014 *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry, Tulare County, California* by EMKO Environmental, Inc.

Account Overview For 022-4659-04

Account Profile Information

Name / Address Information

Customer Name:	R M C PACIFIC MATERIALS INC
Customer Address:	6601 KOLL CENTER PKWY PLEASANTON, CA 94566
Service Account Name:	R M C PACIFIC MATERIALS INC
Service Account Address:	22948 PLANT LEMNCOVE, CA 93244

Customer / Account Information

Customer Number:	0-912-9797
Customer Account Number:	24-862-4884
Service Account Number:	022-4659-04
Installed Service Number:	0015-382-22
Site Number:	00013-39-22
Premise ID:	3176058
L. R. Number:	0
Old CIS Number:	58-51-878-5995-07

Service Account Properties

Account Status:	ACTIVE
Direct Access:	NO
Facility SIC:	1442
Meter Number:	256000054197
Meter Phase:	3
Service Voltage:	480

Annual Summary (Most recent 12 Months)

Annual kWh Usage:	25,203
Annual Max kW:	42
Annual Max kVa:	21
Annual Max kVar:	0
Power Factor:	100.0
Annual Billed Total:	$4,366.11
* Average Cents/kWh:	$0.17324

Billing Summary

Data displayed in this report is current as of the date of the most recent billing period seen in the Billing Summary section below. Account activity subsequent to this date may impact the data presented in this report.

* The average cents/kWh value is determined by dividing the total bill amount by the total quantity of kWh usage. The total bill amount, and therefore the average cents/kWh, contains all charges including, but not limited to, energy charges, demand charges, service charges, late payment charges, and applicable taxes.

Read Date	Days	Tariff	kWh Usage	Max KW	Load Factor	LPC Amount	City Tax	Cents / kWh	Bill Amount
06/12/2014	30	PA-1	0	18	0.00	$0.00	$0.00	$0.00000	$79.92
05/13/2014	29	PA-1	0	18	0.00	$0.00	$0.00	$0.00000	$80.68
04/14/2014	32	PA-1	0	22	0.00	$0.00	$0.00	$0.00000	$80.68
03/13/2014	30	PA-1	0	38	0.00	$0.00	$0.00	$0.00000	$80.68
02/11/2014	29	PA-1	0	40	0.00	$0.00	$0.00	$0.00000	$80.68
01/13/2014	33	PA-1	0	40	0.00	$0.00	$0.00	$0.00000	$78.35
12/11/2013	33	PA-1	0	40	0.00	$0.00	$0.00	$0.00000	$76.01
11/08/2013	30	PA-1	0	41	0.00	$0.00	$0.00	$0.00000	$74.65
10/09/2013	29	PA-1	0	40	0.00	$0.00	$0.00	$0.00000	$75.37
09/10/2013	33	PA-1	0	40	0.00	$0.00	$0.00	$0.00000	$75.65
08/08/2013	29	PA-1	12,548	42	0.43	$0.00	$0.00	$0.14221	$1,784.44
07/10/2013	32	PA-1	12,655	21	0.77	$0.00	$0.00	$0.14216	$1,799.00
06/08/2013	29	PA-1	19,464	22	1.30	$0.00	$0.00	$0.13974	$2,719.94
05/10/2013	30	PA-1	12,211	22	0.79	$0.00	$0.00	$0.14195	$1,733.35
04/10/2013	28	PA-1	28,138	22	1.94	$0.00	$0.00	$0.14561	$4,097.21
03/13/2013	32	PA-1	22,956	41	0.72	$0.00	$0.00	$0.14959	$3,434.01
02/09/2013	29	PA-1	18,771	28	0.97	$0.00	$0.00	$0.15030	$2,821.24
01/11/2013	31	PA-1	22,435	43	0.70	$0.00	$0.00	$0.14131	$3,170.19

This rate analysis is based on applicable Southern California Edison (SCE) rates and is provided to illustrate potential bill impacts to help you evaluate your current rate and/or compare alternative SCE rates or rate options. While this rate analysis provides accurate rate calculations, it is based on certain assumptions for usage and applicable rate factors. The results of this analysis are based on actual historical energy consumption and/or assumptions about future energy consumption patterns and amounts. SCE can neither predict nor guarantee any actual cost savings or increases due to the changes to usage variables or applicable rate factors such as: operating hours, equipment, kVar charges, weather patterns, service voltage, firm service levels, taxes, and added facilities charges. Changes to these numerous variables will affect actual costs. This rate analysis is intended to compare selected rate schedules and may not include all of your rate options. Please contact SCE for more information about this analysis or your available rate options. If you have a SCE account representative, please contact your SCE account representative for more information about this analysis or your available rate option

Account Overview For 022-4659-04

Billing Summary (continued)

Data displayed in this report is current as of the date of the most recent billing period seen in the Billing Summary section below. Account activity subsequent to this date may impact the data presented in this report.

*The average cents/kWh value is determined by dividing the total bill amount by the total quantity of kWh usage. The total bill amount, and therefore the average cents/kWh, contains all charges including, but not limited to, energy charges, demand charges, service charges, late payment charges, and applicable taxes.

Read Date	Days	Tariff	KWh Usage	Max KW	Load Factor	LPC Amount	City Tax	Cents / KWh	Bill Amount
12/11/2012	33	PA-1	22,328	43	0.65	$0.00	$0.00	$0.13734	$3,066.51
11/08/2012	28	PA-1	16,054	22	1.07	$0.00	$0.00	$0.13854	$2,224.17
10/11/2012	31	PA-1	14,075	32	0.59	$0.00	$0.00	$0.13913	$1,958.24
09/10/2012	33	PA-1	13,183	49	0.34	$0.00	$0.00	$0.13946	$1,838.44
08/08/2012	29	PA-1	11,726	24	0.71	$0.00	$0.00	$0.14175	$1,662.13
07/10/2012	32	PA-1	12,938	32	0.52	$0.00	$0.00	$0.14173	$1,833.73
06/08/2012	30	PA-1	5,484	24	0.32	$0.00	$0.00	$0.14778	$810.40
05/09/2012	29	PA-1	9,091	24	0.55	$0.00	$0.00	$0.14259	$1,296.33
04/10/2012	29	PA-1	11,429	24	0.67	$0.00	$0.00	$0.14108	$1,612.40
03/12/2012	32	PA-1	12,651	24	0.68	$0.00	$0.00	$0.14051	$1,777.61
02/09/2012	29	PA-1	11,966	24	0.72	$0.00	$0.00	$0.14082	$1,685.00
01/11/2012	32	PA-1	15,586	24	0.84	$0.00	$0.00	$0.13994	$2,181.06
12/10/2011	30	PA-1	22,510	24	1.31	$0.00	$0.00	$0.13874	$3,122.98
11/10/2011	34	PA-1	15,970	22	0.88	$0.00	$0.00	$0.14066	$2,246.40
10/07/2011	28	PA-1	13,663	20	1.01	$0.00	$0.00	$0.13444	$1,836.84
09/09/2011	31	PA-1	14,569	24	0.80	$0.00	$0.00	$0.13387	$1,950.42
08/09/2011	31	PA-1	14,639	25	0.80	$0.00	$0.00	$0.13307	$1,948.03
07/09/2011	29	PA-1	13,682	27	0.72	$0.00	$0.00	$0.13300	$1,819.68
06/10/2011	30	PA-1	14,127	25	0.78	$0.00	$0.00	$0.13726	$1,939.13
05/11/2011	30	PA-1	11,172	25	0.62	$0.00	$0.00	$0.14199	$1,586.34
04/11/2011	30	PA-1	7,188	25	0.41	$0.00	$0.00	$0.14426	$1,036.95
03/12/2011	31	PA-1	7,844	25	0.43	$0.00	$0.00	$0.14465	$1,134.65
02/09/2011	29	PA-1	11,966	26	0.67	$0.00	$0.00	$0.14198	$1,698.91
01/11/2011	32	PA-1	12,216	27	0.58	$0.00	$0.00	$0.14074	$1,719.24
12/10/2010	30	PA-1	12,886	27	0.67	$0.00	$0.00	$0.14032	$1,808.10
11/10/2010	29	PA-1	11,523	26	0.65	$0.00	$0.00	$0.13773	$1,587.05
10/12/2010	32	PA-1	15,319	20	0.99	$0.00	$0.00	$0.13943	$2,135.92
09/10/2010	30	PA-1	14,329	25	0.81	$0.00	$0.00	$0.14061	$2,014.78
08/11/2010	30	PA-1	13,667	25	0.77	$0.00	$0.00	$0.14180	$1,938.00
07/12/2010	32	PA-1	14,477	24	0.78	$0.00	$0.00	$0.13944	$2,018.64
06/10/2010	30	PA-1	12,969	24	0.74	$0.00	$0.00	$0.14131	$1,832.61
05/11/2010	29	PA-1	12,138	24	0.71	$0.00	$0.00	$0.14088	$1,710.04
04/12/2010	31	PA-1	12,295	25	0.65	$0.00	$0.00	$0.13615	$1,673.94
03/12/2010	30	PA-1	11,113	33	0.47	$0.00	$0.00	$0.13590	$1,510.27
02/10/2010	29	PA-1	10,645	26	0.58	$0.00	$0.00	$0.13345	$1,420.53
01/12/2010	32	PA-1	11,809	22	0.71	$0.00	$0.00	$0.13678	$1,615.29
12/11/2009	29	PA-1	11,242	21	0.78	$0.00	$0.00	$0.13745	$1,545.24
11/12/2009	33	PA-1	13,112	21	0.79	$0.00	$0.00	$0.13756	$1,803.71
10/10/2009	30	PA-1	11,797	21	0.78	$0.00	$0.00	$0.13504	$1,593.05

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Account Overview For 022-4659-04

Billing Summary (continued)

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Read Date	Days	Tariff	kWh Usage	Max kW	Load Factor	LPC Amount	City Tax	Cents / kWh	Bill Amount
09/10/2009	30	PA-1	11,612	21	0.78	$0.00	$0.00	$0.13610	$1,580.40
08/11/2009	29	PA-1	9,904	21	0.68	$0.00	$0.00	$0.13696	$1,356.42
07/13/2009	32	PA-1	14,451	22	0.86	$0.00	$0.00	$0.13694	$1,978.97
Total	1,827		690,523			$0.00	$0.00		$97,450.60
Average	30.45		11,509	27	0.63		$0.00	$0.14113	$1,624.18

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Account Overview For 022-4659-04

Account Profile Information

Name / Address Information

Customer Name:	R M C PACIFIC MATERIALS INC
Customer Address:	6601 KOLL CENTER PKWY PLEASANTON, CA 94566
Service Account Name:	R M C PACIFIC MATERIALS INC
Service Account Address:	22948 PLANT LEMNCOVE, CA 93244

Customer / Account Information

Customer Number:	0-912-9797
Customer Account Number:	24-862-4884
Service Account Number:	022-4659-04
Installed Service Number:	0015-382-22
Site Number:	00013-39-22
Premise ID:	3176058
L. R. Number:	0
Old CIS Number:	58-51-878-5995-07

Service Account Properties

Account Status:	ACTIVE
Direct Access:	NO
Facility SIC:	1442
Meter Number:	256000054197
Meter Phase:	3
Service Voltage:	480

Annual Summary *(Most recent 12 Months)*

Annual kWh Usage:	113,775
Annual Max kW:	33
Annual Max kVa:	21
Annual Max kVar:	0
Power Factor:	100.0
Annual Billed Total:	$15,932.72
* Average Cents/kWh:	$0.14004

Billing Summary

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Read Date	Days	Tariff	kWh Usage	Max kW	Load Factor	LPC Amount	City Tax	Cents / kWh	Bill Amount
07/13/2009	32	PA-1	14,451	25	0.74	$0.00	$0.00	$0.13694	$1,978.97
06/11/2009	30	PA-1	12,292	33	0.53	$0.00	$0.00	$0.13922	$1,711.27
05/12/2009	29	PA-1	9,578	26	0.53	$0.00	$0.00	$0.13859	$1,327.41
04/13/2009	32	PA-1	8,665	22	0.52	$0.00	$0.00	$0.13550	$1,174.08
03/12/2009	30	PA-1	6,829	21	0.46	$0.00	$0.00	$0.14046	$959.17
02/10/2009	29	PA-1	7,076	21	0.49	$0.00	$0.00	$0.14171	$1,002.72
01/12/2009	32	PA-1	9,077	21	0.57	$0.00	$0.00	$0.14060	$1,276.21
12/11/2008	31	PA-1	9,884	21	0.64	$0.00	$0.00	$0.14002	$1,384.00
11/10/2008	33	PA-1	10,819	21	0.66	$0.00	$0.00	$0.14126	$1,528.28
10/08/2008	29	PA-1	8,283	22	0.55	$0.00	$0.00	$0.14234	$1,179.01
09/09/2008	32	PA-1	9,060	27	0.44	$0.00	$0.00	$0.14289	$1,294.57
08/08/2008	29	PA-1	7,761	27	0.41	$0.00	$0.00	$0.14393	$1,117.03
07/10/2008	30	PA-1	7,640	22	0.49	$0.00	$0.00	$0.14413	$1,101.13
06/10/2008	32	PA-1	10,065	34	0.38	$0.00	$0.00	$0.14200	$1,429.21
05/09/2008	29	PA-1	9,271	34	0.39	$0.00	$0.00	$0.14209	$1,317.29
04/10/2008	30	PA-1	5,964	22	0.38	$0.00	$0.00	$0.14237	$849.10
03/11/2008	32	PA-1	5,601	22	0.34	$0.00	$0.00	$0.14226	$796.79
02/08/2008	29	PA-1	5,101	22	0.34	$0.00	$0.00	$0.14281	$728.48

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Account Overview For 022-4659-04

Billing Summary (continued)

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Read Date	Days	Tariff	kWh Usage	Max kW	Load Factor	LPC Amount	City Tax	Cents / kWh	Bill Amount
01/10/2008	30	PA-1	5,712	21	0.37	$0.00	$0.00	$0.14315	$817.68
12/11/2007	33	PA-1	8,734	23	0.48	$0.00	$0.00	$0.14131	$1,234.17
11/08/2007	30	PA-1	10,801	26	0.59	$0.00	$0.00	$0.14017	$1,513.95
10/09/2007	32	PA-1	8,940	23	0.50	$0.00	$0.00	$0.14168	$1,266.62
09/07/2007	29	PA-1	8,197	23	0.52	$0.00	$0.00	$0.14230	$1,166.41
08/09/2007	30	PA-1	10,171	35	0.41	$0.00	$0.00	$0.14104	$1,434.47
07/10/2007	29	PA-1	8,655	34	0.36	$0.00	$0.00	$0.14156	$1,225.20
06/11/2007	32	PA-1	11,331	35	0.43	$0.00	$0.00	$0.14106	$1,598.37
05/10/2007	30	PA-1	6,340	21	0.42	$0.00	$0.00	$0.14413	$913.79
04/10/2007	29	PA-1	4,638	21	0.31	$0.00	$0.00	$0.14683	$680.99
03/12/2007	32	PA-1	5,459	21	0.34	$0.00	$0.00	$0.14639	$799.17
02/08/2007	29	PA-1	5,260	21	0.36	$0.00	$0.00	$0.15416	$810.87
01/10/2007	30	PA-1	5,849	21	0.39	$0.00	$0.00	$0.15604	$912.65
12/11/2006	32	PA-1	7,240	21	0.45	$0.00	$0.00	$0.15538	$1,124.94
11/09/2006	29	PA-1	6,800	21	0.47	$0.00	$0.00	$0.15588	$1,060.00
10/11/2006	30	PA-1	9,011	34	0.37	$0.00	$0.00	$0.15514	$1,397.96
09/11/2006	32	PA-1	8,070	35	0.30	$0.00	$0.00	$0.15598	$1,258.78
08/10/2006	29	PA-1	9,995	35	0.41	$0.00	$0.00	$0.15490	$1,548.27
07/12/2006	30	PA-1	7,922	33	0.33	$0.00	$0.00	$0.15550	$1,231.86
06/12/2006	32	PA-1	9,301	34	0.36	$0.00	$0.00	$0.15488	$1,440.50
05/11/2006	30	PA-1	4,876	21	0.33	$0.00	$0.00	$0.15785	$769.69
04/11/2006	28	PA-1	5,050	20	0.37	$0.00	$0.00	$0.15634	$789.52
03/14/2006	32	PA-1	5,046	21	0.31	$0.00	$0.00	$0.15655	$789.97
02/10/2006	29	PA-1	4,123	21	0.28	$0.00	$0.00	$0.14006	$577.47
01/12/2006	30	PA-1	3,626	24	0.21	$0.00	$0.00	$0.13109	$475.35
12/13/2005	33	PA-1	0	11	0.00	$0.00	$0.00	$0.00000	$38.94
11/10/2005	30	PA-1	1,200	12	0.14	$0.00	$0.00	$0.14944	$179.33
10/11/2005	32	PA-1	1,817	12	0.20	$0.00	$0.00	$0.13851	$251.67
09/09/2005	30	PA-1	2,528	19	0.19	$0.00	$0.00	$0.13267	$335.40
08/10/2005	29	PA-1	5,948	19	0.46	$0.00	$0.00	$0.12395	$737.26
07/12/2005	33	PA-1	2,488	8	0.40	$0.00	$0.00	$0.13228	$329.11
06/09/2005	29	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$38.94
05/11/2005	29	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$39.59
04/12/2005	32	PA-1	24	12	0.00	$0.00	$0.00	$2.11625	$50.79
03/11/2005	30	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$48.39
02/09/2005	28	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$48.39
01/12/2005	33	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$48.39
12/10/2004	31	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$48.39
11/09/2004	33	PA-1	1,132	12	0.12	$0.00	$0.00	$0.14312	$162.01

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Account Overview For 022-4659-04

Billing Summary (continued)

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Read Date	Days	Tariff	kWh Usage	Max kW	Load Factor	LPC Amount	City Tax	Cents / kWh	Bill Amount
10/07/2004	29	PA-1	2,543	12	0.32	$0.00	$0.00	$0.11823	$300.66
09/08/2004	29	PA-1	3,237	12	0.39	$0.00	$0.00	$0.11407	$369.24
08/10/2004	29	PA-1	4,156	12	0.50	$0.00	$0.00	$0.11291	$469.24
Total	1,827		363,637			$0.00	$0.00		$52,489.11
Average	30.45		6,061	22	0.35		$0.00	$0.14434	$874.82

Account Overview For 022-4659-04

Account Profile Information

Name / Address Information

Customer Name:	R M C PACIFIC MATERIALS INC
Customer Address:	6601 KOLL CENTER PKWY PLEASANTON, CA 94566
Service Account Name:	R M C PACIFIC MATERIALS INC
Service Account Address:	22948 PLANT LEMNCOVE, CA 93244

Customer / Account Information

Customer Number:	0-912-9797
Customer Account Number:	24-862-4884
Service Account Number:	022-4659-04
Installed Service Number:	0015-382-22
Site Number:	00013-39-22
Premise ID:	3176058
L. R. Number:	0
Old CIS Number:	58-51-878-5995-07

Service Account Properties

Account Status:	ACTIVE
Direct Access:	NO
Facility SIC:	1442
Meter Number:	256000054197
Meter Phase:	3
Service Voltage:	480

Annual Summary (Most recent 12 Months)

Annual kWh Usage:	24,217
Annual Max kW:	12
Annual Max kVa:	21
Annual Max kVar:	0
Power Factor:	100.0
Annual Billed Total:	$2,950.47
* Average Cents/kWh:	$0.12183

Billing Summary

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Read Date	Days	Tariff	kWh Usage	Max KW	Load Factor	LPC Amount	City Tax	Cents / kWh	Bill Amount
08/10/2004	29	PA-1	4,156	12	0.51	$0.00	$0.00	$0.11291	$469.24
07/12/2004	32	PA-1	3,792	12	0.42	$0.00	$0.00	$0.11387	$431.81
06/10/2004	30	PA-1	2,136	12	0.26	$0.00	$0.00	$0.12113	$258.73
05/11/2004	29	PA-1	6,474	12	0.79	$0.00	$0.00	$0.10954	$709.17
04/12/2004	31	PA-1	96	12	0.01	$0.00	$0.00	$0.46458	$44.60
03/12/2004	31	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$38.15
02/10/2004	29	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$38.15
01/12/2004	33	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$38.15
12/10/2003	33	PA-1	0	12	0.00	$0.00	$0.00	$0.00000	$38.15
11/07/2003	29	PA-1	1,488		0.00	$0.00	$0.00	$0.13235	$196.93
10/09/2003	30	PA-1	2,545		0.00	$0.00	$0.00	$0.10924	$278.01
09/09/2003	32	PA-1	3,530		0.00	$0.00	$0.00	$0.11597	$409.38
08/08/2003	32	PA-1	5,699		0.00	$0.00	$0.00	$0.12740	$726.05
Total	400		29,916			$0.00	$0.00		$3,676.52
Average	30.77		2,301		0.15		$0.00	$0.12289	$282.81

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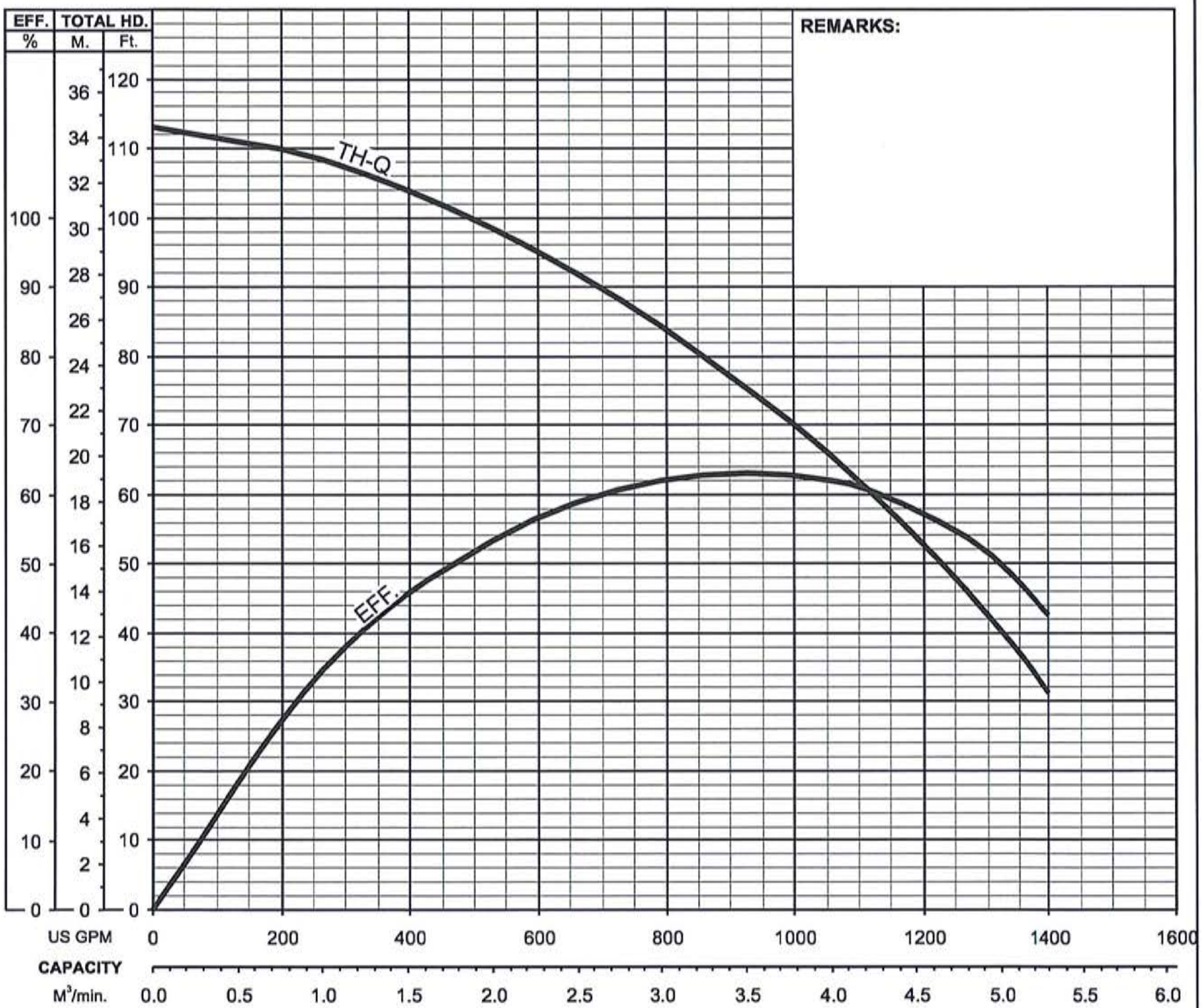
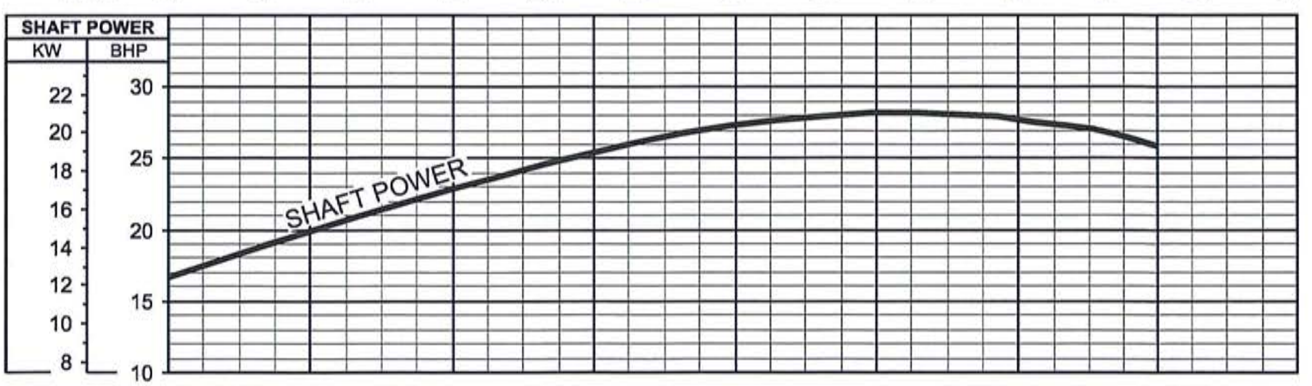
TSURUMI PUMP

KRS - SERIES
HIGH VOLUME - DEWATERING PUMPS

PERFORMANCE CURVE

MODEL		BORE	HP	KW	RPM	SOLIDS DIA	LIQUID	SG.	VISCOSITY	TEMP.
KRS822-60		8"/200mm	30	22	1761	0.984"/25mm	Water	1.0	1.123 cSt	60°F
PUMP TYPE		PHASE	VOLTAGE		AMPERAGE	HZ	STARTING METHOD		INS. CLASS	
High Volume - Dewatering Pump		3	460 / 575		35.5 / 29.0	60	Direct On Line		F	
CURVE No.	DATE	PHASE	VOLTAGE		AMPERAGE	HZ	STARTING METHOD		INS. CLASS	
-	-	-	-		-	-	-		-	





Attachment 4

Hydrology:

46. Prior to commencement of mining, the applicant shall prepare and implement the June, 2002 Groundwater Monitoring Plan adopted for this project. The purpose of the monitoring plan shall be to assess the effectiveness of the V-ditch design in maintaining groundwater levels in wells along the east and southeast boundary of the site and in monitoring the quality of water supplying recharging the local aquifer. All groundwater monitoring and reporting shall be done in accordance with the approved plan. Any property owner with a water well (or water wells) located within a ½ mile radius of the project boundaries may participate in the groundwater monitoring program. The project applicant shall notify all owners with wells within ½ mile of the property boundaries of the opportunity to participate in the groundwater monitoring program. Participation in the program requires that the wells be accessible and in a condition which allows them to be tested on a regular basis.

47. The groundwater monitoring plan shall continue to be implemented after reclamation. However, after three (3) years the applicant may request the RMA to discontinue the groundwater monitoring plan. The monitoring plan may be discontinued if the RMA determines there are no outstanding complaints with valid documentation still to be resolved and that monitoring is no longer needed to meet the objectives of the monitoring plan.

48. In addition to the Annual Groundwater Monitoring Report required by the Groundwater Monitoring Plan, the applicant shall make available to the RMA on a monthly basis, data concerning (1) the locations and amounts of mine dewatering, (2) the locations and amounts of water delivered to the recharge trench, and (3) the locations and amounts of dewatering delivered elsewhere. This data shall be tabulated and provided in a form acceptable to the RMA.

49. The project shall not affect the water level, yield, or quality of any well*, both during the mining operations and subsequently as a reclaimed site. Upon receipt of a written complaint from any owner of a pre-existing well which details an alleged impact to the well's water level, yield, or water quality, the RMA shall request a report from a licensed hydrogeologist explaining the problem. If a significant problem can be professionally demonstrated by a licensed hydrogeologist to be caused by mining activities, then immediate action must be taken to correct the condition, which may include (but is not limited to) modifying the recharge ditches to provide more recharge capacity, reducing the amount of pit dewatering, or if necessary, ceasing mining operations. (* As used herein, an impact to a well shall not be deemed to have occurred if the well water level, well yield, and quality are within ranges of existing conditions specified in the EIR).

50. Prior to commencing mining the applicant shall, at his own expense, retain a qualified soil scientist to prepare a detailed map of the boundaries of the Tujunga sand, Exeter loam, and San Joaquin loam soils along the entire east boundary of the surface mining site. All mining activities shall be set back a minimum distance of 100 feet from the mapped boundary of the westerly extent of the Exeter loam and San Joaquin loam soils, or a distance of 70 feet from the edge of the Foothill Ditch, whichever is greater. The site plan map for the mining project shall be adjusted to show the set backs and submitted to the RMA for approval prior to commencement of mining. A copy of the soils map prepared by the soil scientist shall also be provided to the RMA for review. The set back boundary shall be staked for easy field identification using metal poles driven into the ground and painted red or white. Poles shall be placed at distances of 100 to 200 feet apart, or as necessary to clearly identify the location of the set back boundary.

MM 4.4-4

51. The applicant shall enhance bank vegetation with tree and shrub planting on the land separating the Kaweah River and the active mining site. Planting shall be done in accordance with the site Landscaping Plan approved by the Tulare County RMA.

MM 4.4-5

52. The operator shall construct a north-south trending berm across the eastern third of the reclamation lake in accordance with Figure 3-10 of the project EIR using overburden. Construction of the berm shall be in accordance with plans and specifications prepared by a registered civil engineer and approved by the RMA. Construction of the berm shall also be supervised in the field by a registered civil engineer to ensure compliance with approved plans and specifications. The structural integrity of the berm shall be maintained by the applicant until such time as reclamation of the site is certified complete by the RMA. The berm shall be maintained at all times to conform with original plans and specifications as approved by the RMA. The RMA may inspect the berm at any time, and require repairs and/or improvements as necessary to ensure its maintenance in accordance with the original plans and specifications. In addition, a recharge trench will be constructed along the southeast corner of the project area. Through a series of weirs, water will flow from the east lake to the west lake to maintain current groundwater elevations along the properties to the northeast of the project area.

53. The applicant shall contact the State of California Division of Safety of Dams prior to constructing the north-south trending berm separating the reclamation lakes to determine if construction of the berm requires Division approval. The applicant shall be required to provide any maps, drawings, schematics, or specifications the Division deems necessary in making it's determination.

54. Upon completion of reclamation, the property owner (or future property owner should the site be sold or otherwise transferred) shall be responsible for maintaining the condition of the berm separating the reclamation lakes and weirs providing water flow from the east lake to the west lake in accordance with Condition No. 52 above.

55. The proposed "V" ditch along the east side of the project site shall contain a sufficient amount of water in order to establish a groundwater mound (groundwater barrier) to maintain water levels in neighboring wells. The trench shall be constructed to a depth sufficient to intersect the layer (substrata) of cobbles, or comparable pervious material, that occurs locally beneath the site (a depth of approximately 6 to 8 feet). The sides and bottom of the "V" ditch shall be designed and maintained to maximize the amount infiltration necessary in establishing the groundwater mound. Water produced from dewatering the mine site shall not be pumped directly into the "V" ditch, but shall initially be pumped into a holding basin(s) to allow fines in the water to settle out and flocculation and precipitation of dissolved iron minerals to occur.

Utilities:

MM 4.9-1(b) 56. The applicant shall provide replacement rights to Southern California Edison (SCE) for any access roads which may need to be relocated due to mining, at no cost to SCE.

MM 4.9-1(a) 57. Construction of the utility access road crossing shall be adequately sloped to ensure access to SCE vehicles and equipment onto tower access roads. Any earth disturbed within the right of way and/or backfill shall be compacted to a minimum of 90% relative compaction. Road conditions shall not be allowed to deteriorate so as to prevent access to SCE vehicles.

MM 4.9-1(c) 58. The applicant shall install commercial-type driveways, 16-feet wide, with curb depressions capable of supporting 40 tons on a three axle vehicle when and where access points dictate.

MM 4.9-1(d) 59. The mine operator shall establish and observe a fifty (50) foot setback around existing SCE utility towers, with an additional 50-foot setback added northwesterly of the towers to provide SCE adequate access for reconstruction of the towers, if necessary. Setbacks shall be staked and marked for easy identification by onsite personnel and SCE employees.

Attachment 5

From: Pete Locastro <pete.locastro@cemex.com>
To: akopania@sbcglobal.net
Cc: Gordon K Brown <gordonk.brown@cemex.com>
Sent: Tuesday, August 5, 2014 1:48 PM
Subject: Fw: Lemon cove Tsurumi 30hp pump data

Gentleman,

Below is an e-mail from Mike Branco owner of American Industrial Pump and Equipment. This is the vendor who sized the electrical pump for the Stillwell pit dewatering. He has attached a spec sheet and e-mail stating the KW used and GPM.

I have updated the excel sheet to match his numbers. The flood of water occurred during January 2011. You can see from the electrical usage that the use increased. Also, if you look at the Dellevalle monitoring report for that time they noted that water was formed in the pasture of the wells and that a flood had occurred and caused damage. Noted on the excel sheet are the dates and amounts we pumped into the north pond.

Peter LoCastro
Rockfield 4401 Plant Manager - Northern California Aggregate - United States of America
Office : +559(822)2090 Fax: +559(822)2092 Mobile: +559(287)7912
Address: 113475 N. Friant Rd. Friant Ca, 93626
e-Mail: pete.locastro@cemex.com
www.cemexusa.com

----- Forwarded by Pete Locastro/US/Cemex on 08/05/2014 01:10 PM -----

From: Mike Branco <mbranco@aiequip.com>
To: Pete Locastro/US/Cemex@CEMEX
Date: 08/05/2014 12:51 PM
Subject: Fwd: Lemoncove Tsurumi 30hp pump data

Sent at 8:46 this AM

Sent from my iPhone

Begin forwarded message:

From: Michael Branco <mbranco@aiequip.com>
Date: August 5, 2014 at 8:46:19 AM PDT
To: "pete.locastro@cemex.com"<pete.locastro@cemex.com>
Subject: Lemoncove Tsurumi 30hp pump data
Reply-To: Michael Branco <mbranco@aiequip.com>

Pete,

Please find the information specific to the Tsurumi 30hp pump performance. This unit was selected to provide 1000 gpm flow rate and operated with a 460 volt 30hp (22kW) motor.

Please call if I may be of further assistance.

Regards,

Mike Branco
American Industrial Equipment
925 454-3450 phone
925 454-3454 fax

Attachment 6

Excerpt of DellaValle Groundwater Level Data Report for July 2007 through May 2009

Well Identification	1-Jul	1-Aug	1-Sep	1-Oct	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	1-Jul	1-Aug	1-Sep	1-Oct	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May
Wolford	12.06	11.84	13.57	13.78	14.00	14.00	13.72	14.34	21.10	15.00	14.97	13.00	11.94	14.29	14.83	14.81	15.37	14.61	15.75	14.55	14.65	21.97	14.51
Weller	5.22	10.74	5.10	6.05	4.62	4.82	5.06	13.38	13.52	13.55	14.71	14.02	14.44	14.78	15.05	15.27	15.72	16.00	36.91	15.67	15.88	16.05	16.05
Stillwell	21.40	20.25	20.45	14.70	15.18	14.68	15.05	4.87	5.17	5.18	5.21	5.25	5.20	5.10	9.09	6.11	5.86	5.90	6.23	5.63	6.42	6.55	NR
Morton	6.60	5.60	5.87	5.85	5.93	5.80	5.87	6.80	5.96	8.92	5.26	5.14	6.11	7.00	8.13	6.38	5.90	6.19	6.42	6.55	6.92	5.79	10.05
Cairnes	9.80	6.69	6.94	6.90	6.80	6.95	7.11	7.09	7.56	6.60	6.58	6.90	7.13	7.39	6.10	5.96	5.20	6.64	7.07	7.40	7.84	7.16	7.29
Aksarban	17.71	17.70	17.72	17.59	17.70	17.63	17.92	18.05	18.37	18.20	17.72	17.60	17.56	17.72	17.64	17.41	17.42	17.80	18.32	18.79	19.50	18.67	18.70
Serrins	73.91	72.62	79.75	78.21	72.64	80.96	73.30	75.33	75.40	74.43	84.03	82.13	75.44	75.68	86.15	75.02	74.71	74.33	NR	NR	NR	NR	NR
Mills	15.31	15.46	16.66	15.00	14.50	14.75	14.81	14.82	14.80	15.22	14.98	15.33	15.60	15.87	16.34	17.30	20.40	16.14	12.65	18.22	16.66	16.50	16.40
Hammond	13.28	12.90	19.50	12.60	NR	11.20	12.09	11.74	14.88	12.46	NR	17.22	13.79	14.25	13.55	14.32	13.12	13.38	13.15	13.28	10.88	13.90	14.10

Well Identification	1-Jul	1-Aug	1-Sep	1-Oct	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	1-Jul	1-Aug	1-Sep	1-Oct	1-Nov	1-Dec	1-Jan	1-Feb	1-Mar	1-Apr	1-May
MW 1	7.11	6.97	6.88	6.52	6.48	6.63	6.75	6.34	6.94	7.12	7.24	7.10	7.43	8.00	7.94	8.13	7.85	6.92	8.07	8.00	8.25	8.38	8.00
MW 2	9.06	9.86	9.84	9.69	9.33	9.51	9.43	9.46	10.40	9.91	9.98	9.75	10.13	10.63	11.10	10.78	10.40	10.44	10.73	10.91	11.10	10.61	10.65
MW 3	3.44	3.86	3.90	6.87	3.65	3.79	4.20	4.50	5.00	3.69	3.71	3.75	3.90	4.22	4.43	3.66	3.32	3.36	3.95	4.12	4.60	3.33	3.85
MW 4	5.71	6.74	6.61	6.76	6.65	6.79	7.08	7.11	7.82	5.97	6.01	6.60	6.79	7.16	5.05	6.72	6.38	6.42	6.80	7.00	7.76	6.51	6.45

NR - Not Read

Well Identification																							
Wolford									Being irrigated														
Weller																Watch for dogs.			Measured Twice - Pump running				
Stillwell	Well was running															Gate locked.							Mean Dogs
Morton																							
Cairnes																							
Aksarban																							
Serrins											Well was running								No key	No key	No key	No key	No key
Mills																							
Hammond					No one was home.						Locked out												
Monitoring well #1						No water in the ditch	No water in the ditch	No water in the ditch			Ditch 1/2 full	Ditch running full	Ditch running full	Ditch running full	Ditch running full	Ditch running full	Ditch running full	ditch runnin 3/4 full	No water in ditch	No water in ditch	No water in ditch	Ditch full of water	Ditch full of water
Monitoring well #2	Ditch was 3/4 Full	Ditch running full.	Ditch running full.	Ditch running full.						Ditch running full													
Monitoring well #3																							
Monitoring well #4																							

Attachment 7

HYDROGEOLOGIC DATA EVALUATION REPORT
STILLWELL PASTURE
LEMONCOVE, CALIFORNIA

Prepared for:
RMC Pacific Materials, Inc.
6601 Koll Center Parkway, Suite 300
P.O. Box 5252
Pleasanton, CA 94566

Prepared by:
EMKO Environmental, Inc.
551 Lakecrest Dr.
El Dorado Hills, CA 95762

~~May 31, 2001~~
June 10, 2002

PROFESSIONAL CERTIFICATION

This report has been prepared by and under the direct supervision of a California Registered Geologist and Certified Hydrogeologist.

REGISTERED GEOLOGIST
ANDREW A. KOPANIA
No. 4711
STATE OF CALIFORNIA

Dr. Andrew A. Kopania
RG#4711 exp. 4/30/04
CH#31 exp. 4/30/04

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1.0 INTRODUCTION

This Hydrogeologic Data Evaluation Report has been prepared at the request of RMC Pacific Materials, Inc. to analyze a proposed gravel mining operation at the Stillwell Pasture near Lemoncove, California. A description of the proposed project is provided in the Draft Environmental Impact Report (DEIR), prepared by Resource Design Technology, Inc. Hydrogeologic data collection activities have been conducted at the site by Sierra-Pacific Group (2000). The basic data and descriptions of geologic conditions in Sierra-Pacific Group (2000) are considered valid and are incorporated into this report. This report, however, supercedes and replaces interpretations regarding aquifer parameters, groundwater flow, and water balances presented in Sierra-Pacific Group (2000). Other data sources are listed in the references cited at the end of this report.

The Stillwell Pasture is located within the Sierra Nevada foothills, where the metamorphic and granitic rocks of the Sierra Nevada mountains transition with the alluvium and sediments of the San Joaquin Valley. The regional and local geology has been described by Sierra-Pacific Group (2000). According to Sierra-Pacific Group (2000, Plate 2), a brown poorly-graded sand is present to approximately eight feet to 10 feet below ground surface. Below the shallow sand is a sequence of gray to yellowish-brown sand, gravel, and cobbles, referred to as conglomerate. The conglomerate averages approximately 20 feet thick. Beneath the conglomerate, a basal white, poorly-graded sand is present beneath most of the project area. The base of the sand varies from approximately 30 feet to 40 feet below ground surface. Granitic and metamorphic bedrock is present beneath the conglomerate. Based on driller's logs from the area, the upper 25 feet to 30 feet of the bedrock appears to be unfractured, or the fractures have been cemented or filled with fine-grained material from the overlying sediments. Figure 3-9 of the DEIR is a generalized cross section that depicts the subsurface geology beneath the Stillwell Pasture.

Groundwater within the sediments and alluvium is consistently present at a depth of three feet to six feet below ground surface. Within the bedrock, groundwater is typically not encountered until depths of 50 feet to 70 feet below ground surface or greater.

The proposed project consists of the excavation of a series of four gravel pits within the shallow sand and conglomerate described above. The four gravel pits will encompass 89 acres of the 137-acre project area within the Stillwell pasture. Two of the pits will be located along the eastern side of the site and two will be located along the western side. During the excavation of each individual gravel pit, dewatering will occur within that pit. After mining has been completed in a specific pit, the pit will be allowed to fill with water. After all four pits have been mined out, the material between the individual pits will be removed without dewatering. Additional information about the project is provided in the DEIR.

The purpose of this report is to provide a hydrogeologic evaluation of four specific technical issues related to the proposed project. These issues are:

- X Estimation of aquifer parameters based on aquifer pumping tests conducted at the project site;
- X Calculation of a water balance for the proposed project site to compare current, active-project, and post-project conditions;
- X Conduct a hydrogeologic assessment of the potential impacts of the proposed project on water flows within the adjacent Kaweah River; and
- X Conduct a hydrogeologic assessment of the potential impacts of the proposed project on nearby shallow private wells.

Each of these issues are addressed in the following sections. For additional information on the proposed project, please refer to the DEIR.

2.0 AQUIFER PARAMETERS

Several aquifer pumping tests have been conducted at the Stillwell pasture, as described by Sierra-Pacific (2000). The evaluation of many of the issues related to mining of the Stillwell property, such as the water balance and impacts on nearby wells, are dependent upon the aquifer parameters estimated from the aquifer pumping tests conducted at the site. Therefore, identification of the aquifer parameters is an important quantitative step in assessing the impacts of the proposed project.

For this review, two of the aquifer tests conducted at the site have been evaluated in detail. One of these tests is the first 72-hour aquifer test conducted using well E-1 as the pumping well. The other test is the 13.25-hour aquifer test conducted using well E-3 as the pumping well. These tests are referred to as the E-1 test and the E-3 test, respectively. The E-1 test was conducted at 14 gallons per minute (gpm) and the E-3 test was conducted at 50 gpm. The E-3 test ended prematurely due to excessive sanding of the well during the aquifer test. Please see Sierra-Pacific (2000) for a discussion of the details of these aquifer tests and maps showing the well locations.

The data were interpreted using the AQTESOLV software package. AQTESOLV is a widely used package for the interpretation of aquier-test data. Attachment A includes the curve-matching plots and interpretation of the data from the first 72-hour aquifer test conducted in well E-1. The estimated aquifer parameters are summarized in Table 1. The estimated transmissivity values vary by a factor of almost 60% between the highest and lowest values, pointing out the significance of the heterogeneity and anisotropy of the aquifer. The average transmissivity for all observation points is approximately 21,000 feet squared per day (ft^2/day), or 155,000 gallons per day per foot (gpd/ft).

Attachment B includes the curve-matching plots and interpretation of the data from the

13.25 hour aquifer test conducted in well E-3 (referred to as the 'Schmidt Well' in some previous reports). The estimated aquifer parameters are summarized in Table 1. For the three observation points E-1, T-3, and T-4, the estimated transmissivity varies by only about 20%. The small degree of apparent heterogeneity is likely due to the observation wells being closer to the pumping well, as compared to the E-1 aquifer test. For the pumping well, E-3, the transmissivity is a factor of 10 less than the estimates from the other three observation points. As shown on the AQTESOLV plot for well E-3 in Attachment B, the drawdown data are very irregular and difficult to interpret. This is likely due to the large amount of sand produced during the aquifer test. The data from well E-3 are not considered representative of aquifer conditions and are not included in the evaluation of aquifer parameters.

As shown in Table 1, the average transmissivity value from the E-3 aquifer test is about 2,275 ft^2/day, or 17,000 gpd/ft, based on the data from wells E-1, T-3, and T-4. This value is approximately 10 times less than the values obtained from the E-1 aquifer test.

An analytical calculation can be used to assess the performance of the E-1 and E-3 pumping wells, and determine which test provides the most representative aquifer parameters. The analytical calculation was conducted using the Theis equation for drawdown in an aquifer (Veissman, et al., 1977). The calculation can be used to estimate the "expected" drawdown from pumping at the pumping well during the aquifer pumping test.

For the E-1 test, the analytical calculation predicts a total drawdown of 0.2 ft (about 2.5 inches) at the pumping well at a pumping rate of 14 gpm. The actual drawdown observed at E-1 was in excess of 24 ft. The appreciable difference between the predicted and actual drawdown indicates that the pumping well is relatively inefficient. The inefficiency may be due to well-screen and gravel-pack materials that are too small for the aquifer, damage to the aquifer caused during drilling (e.g. clay smearing on the surface of the borehole), or both. Note that the □inefficiency□ applies only to conditions within the well itself, not in the surrounding aquifer. Thus, although the drawdown within the well is 24 ft when pumping at 14 gpm, the drawdown within the aquifer immediately adjacent to the borehole will still be only 0.2 ft.

For the E-3 test, the analytical calculation predicts a total drawdown of 4.8 ft for the pumping well after pumping at 50 gpm for a period of 12 hours. The actual drawdown observed at well E-3 after 12 hours of pumping was 6.9 ft. The difference between the predicted and actual drawdown demonstrates that well E-3 is much more efficient than well E-1.

In summary, well E-3 is a more efficient pumping well than E-1, as demonstrated by the higher pumping rate and lower drawdown. Given the very small drawdowns in the aquifer during the 14-gpm E-1 aquifer pumping test, it is likely that the well was not pumped at a rate sufficient to adequately stress the aquifer. Based on the interpretation of the aquifer test data and the analytical calculation described above, the transmissivity of the aquifer is in the range of 2,275 ft^2/day, or 17,000 gpd/ft.

3.0 WATER BALANCE

A water balance has been prepared to evaluate the potential impacts of the project on groundwater supplies and groundwater discharge to the Kaweah River. In general, a water balance considers all of the water inputs to an area and all of the water outputs to an area. For this project, the water inputs include groundwater flow within the alluvium that enters the upgradient (eastern) edge of the Stillwell pasture (referred to as "groundwater inflow"), rainfall, and irrigation water applied to the pasture. Water outputs include surface runoff, evapotranspiration of applied irrigation water from the pasture, evaporation from surface-water bodies, and groundwater discharge to the Kaweah River at the downgradient (western) edge of the project site. A conceptual representation of the inputs and outputs of the water balance is shown on Figure 2.

For the project site, a water balance has been conducted for pre-project, or current, conditions (Figure 2A), for an active-project scenario, and for post-project conditions (Figure 2B). The active-project scenario used in the water balance calculations represents the time at which Phases II and III have been completed, as described in the EIR, but before Phases IV and V begin. Comparison of the pre-project, active-project, and post-project water balances provides a means to compare the potential impacts of the project on groundwater supplies and groundwater discharge to the Kaweah River.

As discussed further below, the potential impacts on discharge to the Kaweah River extend beyond the project boundaries since the 137-acre Stillwell pasture is irrigated with water from ponds located north of the project site. Thus, a separate comparative water-balance has also been conducted for the northern ponds (Figure 2C).

Each of the individual water inputs and outputs are discussed below, prior to conducting the comparative water balance for the northern ponds and the pre-project, active-project, and post-project water balances for the project site.

The accuracy of the values in the water balance varies by source. The values used shown in Table 2 are listed at a level of accuracy consistent with that used by the reporting source. For example, the Department of Water Resources (DWR), U.S. Geological Survey (USGS), or the Corps of Engineers report rainfall numbers to the hundredth of an inch and pan evaporation to the tenth of an inch. Thus, input parameters such as rainfall and pan evaporation reported as 1.18 ft/yr and 6.88 ft/yr, respectively, are used with the appropriate number of significant figures. The overall water-balance calculations, however, do not have the same degree of accuracy due to the general nature of the area calculations or estimates of groundwater inflow from the east. Thus, rainfall and evaporation-related calculations are rounded to the nearest acre-foot and groundwater and irrigation-related calculations are rounded to the nearest 10 acre-feet. This presentation is consistent with the appropriate level of accuracy of the input and output terms while still allowing the calculations to take into account minor water-balance terms, such as runoff.

3.1 Water Inputs

The water inputs include groundwater inflow from upgradient of the site, rainfall, and applied irrigation water.

Groundwater Inflow

The groundwater inflow entering the project site can be defined by Darcy's Law (Viessman et al., 1977):

$$Q = TiL,$$

where Q is the total groundwater inflow entering the upgradient project boundary, T is the transmissivity of the shallow alluvial aquifer material, *i* is the hydraulic gradient, or slope, of the groundwater surface, and L is the length of the upgradient side of the project. As discussed above, the transmissivity of the shallow alluvial aquifer is approximately 2,275 feet squared per day (ft^2/d). The hydraulic gradient is reported to be 0.003 ft/ft to 0.004 ft/ft by Sierra-Pacific. For the water balance calculations, an average value of 0.0035 ft/ft is used. The length of the upgradient project boundary is approximately 4,000 ft. As shown on Table 2, these values indicate that approximately 270 acre-feet of groundwater water per year (AF/yr) flows under the upgradient project boundary.

Rainfall

The average rainfall for the Lemoncove area is reported to be 14.16 inches per year, or 1.18 ft/yr. For the 137-acre project site, the total rainfall is 162 AF/yr, as shown on Table 2.

Irrigation

Currently, an average of 142 inches per year, or 11.83 ft/yr, of irrigation water is applied to the 137-acre project site. This is equivalent to 1,620 AF/yr of applied irrigation water.

For the active-project scenario, it is assumed that 100 acres of the site exists as irrigated pasture and that mining has occurred on 37 acres. Application of 11.83 ft/yr of irrigation water to the 100-acre pasture area is equivalent to 1,180 AF/yr, as shown in Table 2.

After the project is completed, the 137-acre site will consist of an 89-acre lake and up to 48 acres of irrigated pasture. Application of 11.83 ft/yr of irrigation water to the 48-acre post-project pasture area is equivalent to 570 AF/yr. It is worth noting that the actual post-project irrigated pasture area may be less than 48 acres. Thus, the total post-project irrigation water input may be less than 570 AF/yr. As discussed below, however, the actual acreage does not affect the overall water balance since any changes in the amount of applied irrigation water input are directly offset by a reduction in the irrigation pumping output from the northern ponds.

3.2 Water Outputs

The water outputs include surface runoff, evapotranspiration (ET) of applied irrigation water from the pasture, evaporation from surface-water bodies, and groundwater discharge to the Kaweah River at the downgradient (western) edge of the project site.

Surface Runoff

The surface runoff output acts to reduce the amount of rainfall that actually enters the subsurface at the site. The more runoff that occurs, the less significant the rainfall is as an input. Currently, the surface of the Stillwell pasture slopes toward the Kaweah River at the rate of approximately 10 ft per 2,400 ft, or 0.4%, which is relatively flat.

Runoff can be estimated by applying a runoff factor to the rainfall amount. The Stillwell pasture site consists of grasslands with sandy soil. According to Viessman et al. (1977), the runoff factor for grasses on sandy soil, with a slope of less than 2% is 0.05 to 0.10. To be conservative, a value of 0.10 is used in this water balance. Thus, the runoff from the existing pasture is 16 AF/yr (0.10 times the rainfall input of 162 AF/yr for the entire 137-acre project area).

During the active project, runoff from half of the 137-acre site (68.5 acres) will occur as it does under current conditions because mining will not have begun on that part of the site. For the Phase II and Phase III areas of the site, 37 acres will be reclaimed as a lake and 31.5 acres will remain as pasture. There will be no runoff from the 37-acre lake. Runoff from the northern and eastern parts of the 31.5-acre pasture area will be toward the lake and will not act as a water output from the site. In addition, approximately one half of the area between the lake and the Kaweah River will drain to the lake. Thus, a maximum of about five acres will potentially drain from the site and act as a runoff output. The total runoff output under the active-project scenario will, thus, be nine AF/yr (0.10 times {68.5+5 acres} times 1.18 ft/yr of rainfall), as shown in Table 2.

Under post-project conditions, 89 acres of the site will be a lake, from which there will be no runoff. Of the remaining 48 acres, an appreciable fraction will drain toward the lake and will not act as a water output from the site. Specifically, areas to the east, north, and south will drain to the lake. In addition, approximately one half of the area between the lake and the Kaweah River will drain to the lake. Thus, a maximum of about six acres will potentially drain from the site and act as a runoff output. The total runoff output under post-project conditions will, thus, be one AF/yr (0.10 times six acres times 1.18 ft/yr of rainfall).

Evapotranspiration (ET)

ET represents the amount of applied irrigation water and rainfall that is lost to both surface evaporation and transpiration from plant surfaces. The ET is estimated based on a factor that is applied to the rate of pan evaporation for the area. ~~Based on information presented by Sierra Pacific (2000) and the California Department of Water Resources (1975, 1986, and 1993), the pan factor for irrigated pasture is 0.77~~. The pan evaporation rate for the area has been addressed by Barnes (1997), based on U.S. Army Corps of Engineers data from Terminus Dam. The average pan evaporation rate over the 25-year period from 1962 to 1987 is 82.56 inches per year, or 6.88 ft/yr.

ET can be determined by direct measurement and by applying a factor to the pan evaporation rate. The DWR refers to this factor as the ET/Ep ratio, or the ratio of crop ET to the pan evaporation rate. The DWR has compiled a substantial amount of data regarding crop ET and the ET/Ep ratio in Bulletin No. 113-3. This information is summarized on the attached Table C-1 as it pertains to this project. Column A of Table C-1 shows the average pan evaporation rate for irrigated pasture areas of the San Joaquin Valley, as reported by the DWR and discussed above.

Column B of Table C-1 shows the actual ***measured*** irrigated pasture ET within the San Joaquin Valley. Column C is the ET/Ep ratio calculated by dividing Column B by Column A. The ET/Ep ratio based on actual measured ET averages 0.81 for both the growing season and the entire year.

The DWR also provides recommended ET/Ep ratios in Table 5 of DWR Bulletin No. 113-3. The recommended monthly ET/Ep ratios for irrigated pasture in the San Joaquin Valley are shown in Column D of Table C-1. Based on the DWR recommended values, the average annual ET/Ep ratio is 0.77.

Column E of Table C-1 shows the DWR's estimated growing-season ET for irrigated pasture in the San Joaquin Valley. The total growing season ET is 44.2 inches, while the growing season pan evaporation is 57.2 inches. Thus, the growing season ET/Ep ratio for irrigated pasture in the San Joaquin Valley is 0.77, the same as the DWR recommended annual ET/Ep ratio, discussed in the above paragraph.

The measured pasture ET, DWR-recommended ET/Ep ratios, and DWR-estimated growing season ET all consistently result in ET values that are within the range of 0.77 to 0.81 times the pan evaporation rate. It should be noted that these ET/Ep ratios apply specifically to irrigated pasture land within the San Joaquin Valley. The DWR data indicate that there are many common crops raised within the San Joaquin Valley for which the

ET/Ep ratio is less than lake evaporation (e.g. melons, tomatoes, grapes, and tree crops such as nuts and citrus). For irrigated pasture, however, the data consistently indicate ET rates in the range of 0.77 to 0.81.

As discussed below, the pan evaporation rate at Terminus Dam is much higher than the pan evaporation rate measured by DWR at irrigated pastures where ET was also measured. Therefore, it is not appropriate to use the direct ET measurements made by the DWR in agricultural areas for evaluation of the Stillwell property. The appropriate reference values for evaluation of ET at the Stillwell property are the ET/Ep ratios developed by DWR. As discussed above, the annual ET/Ep ratios vary from 0.77 to 0.81. However, to present the most conservative (i.e. environmentally protective) assessment of ET from the Stillwell pasture, the **MINIMUM** annual ET/Ep ratio provided by the DWR for irrigated pasture, 0.77, was used in the DEIR.

For the existing 137-acre pasture, the ET is 726 AF/yr (0.77 times 6.88 ft/yr times 137 acres).

For the 100 acres of the project site that will not be a lake under the active-project scenario, the ET will be 520 AF/yr (0.77 times 6.88 ft/yr times 100 acres).

For the 48 acres of the project site that will not be a lake under post-project conditions, the ET will be 254 AF/yr (0.77 times 6.88 ft/yr times 48 acres).

Evaporation from Surface-Water Bodies

Under current conditions, there are no open surface-water bodies on the 137-acre project site. Thus, there is currently no evaporation from surface-water bodies on the site.

Under the active-project scenario, a 37-acre lake will be present on the site. Lake evaporation is estimated by applying a factor to the pan evaporation rate for the area. As discussed above, the pan evaporation rate is 6.88 ft/yr. The lake factor can be estimated from two different sources. According to the National Oceanic and Atmospheric Administration (NOAA, 1982), the evaporation rate from a shallow lake is approximately 70% of the pan evaporation rate. Thus, the lake evaporation pan factor, according to NOAA, is 0.70. Data from the U.S. Army Corps of Engineers for Terminus Dam, however, suggests that the pan factor in the Lemoncove area may be as high as 0.78 (Barnes, 1997). References in the scientific literature suggest that lower pan factor valves, such as 0.7, are more applicable to large lakes, whereas higher pan factor values, such as 0.78, are more applicable to small lakes and ponds.

Due to the uncertainty in the local pan factor for lake evaporation, the water balance is conducted using both factors. Using the NOAA factor, the lake evaporation output in the water balance is 178 AF/yr (0.70 times 6.88 ft/yr times 37 acres of lake surface) for the active-project scenario, as shown in Table 2. Using the Army Corps of Engineers (ACE) factor, the lake evaporation output in the water balance is 199 AF/yr (0.78 times 6.88 ft/yr times 37 acres of lake surface). The difference between the lake evaporation outputs based on the NOAA and ACE pan factors is approximately 21 AF/yr.

Under post-project conditions, an 89-acre lake will be present on the site. Lake evaporation is estimated by applying a factor to the pan evaporation rate for the area. As discussed above, the pan evaporation rate is 6.88 ft/yr. As discussed above, due to the uncertainty in the local pan factor for lake evaporation, the water balance is conducted using both the NOAA and ACE factors. Using the NOAA factor, the lake evaporation output in the water balance is 429 AF/yr (0.70 times 6.88 ft/yr times 89 acres of lake surface). Using the Army Corps of Engineers (ACE) factor, the lake evaporation output in the water balance is 478 AF/yr (0.78 times 6.88 ft/yr times 82 acres of lake surface). The difference between the lake evaporation outputs based on the NOAA and ACE pan factors is approximately 49 AF/yr.

Groundwater Discharge to the Kaweah River

The groundwater discharge output term in the water balance is the term that defines the potential impact of the active-project scenario and post-project conditions on the available water in the Kaweah River. (Potential impacts to the Kaweah River during the proposed project are discussed in Section 4.0.) The groundwater discharge term, however, can not be estimated in the same manner as the other water balance inputs and outputs described above. To calculate the groundwater discharge, the following water-balance equation is used:

$$I - O = \delta S,$$

where I is the sum of all the input terms, O is the sum of all the output terms, and δS is the change in water storage at the project site (Viessman et al., 1977). A change in water storage at the site, from one year to the next, would be evidenced by appreciable changes in the groundwater surface elevation, the hydraulic gradient, or the water surface elevation within the 89-acre lake in the post-project scenario. Based on data collected at the site (Sierra-Pacific, 2000), the proximity of the groundwater table to the ground surface, and the presence near the site of various surface-water features with controlled flows (e.g. irrigation canals and the Kaweah River), the amount of water in storage at the site is not expected to change from year to year under normal meteorological conditions. Thus, the water-balance equation becomes:

$$I = O,$$

where the sum of all the water inputs is equal to the sum of all of the water outputs.

For current conditions, the water balance includes each of the following parameters:

$$GF + R + Ir = Ro + ET + D,$$

where GF is the groundwater inflow, R is the rainfall, Ir is the applied irrigation water, Ro is the runoff, ET is the evapotranspiration, and D is the discharge to the Kaweah River.

For active-project and post-project conditions, the water balance includes the following parameters:

$$GF + R + Ir = Ro + ET + LE + D,$$

where GF is the groundwater inflow, R is the rainfall, Ir is the applied irrigation water, Ro is the runoff, ET is the evapotranspiration, LE is the lake evaporation, and D is the discharge to the Kaweah River.

As discussed above, all of the terms in the water balance equations are quantified except for the discharge to the Kaweah River (D). Thus, to identify D, each equation can be rewritten as:

$$D = (GF + R + Ir) - (Ro + ET)$$

for current conditions, and as:

$$D = (GF + R + Ir) - (Ro + ET + LE)$$

for active-project and post-project conditions.

For the proposed project, however, evaluation of the potential impact to the Kaweah River is not limited to the project site. Since the 137-acre Stillwell pasture is irrigated with water from the 50-acre northern ponds, the total impact on the Kaweah River must also include an evaluation of the water balance for the northern ponds. This evaluation is presented below.

3.3 Northern Ponds

The irrigation water within the northern ponds is primarily riparian water from the Foothill Ditch. The Foothill Ditch diversion within the Kaweah River is located just upstream from the area of the northern ponds. According to the property owner, if riparian water is not provided to the northern ponds, the ponds would become dewatered very rapidly. In addition, the owner reports that once the ponds are dewatered, it would take a very long time to recharge the ponds with groundwater inflow from the upgradient direction and lateral inflow from the Kaweah River through the geologic material present between the river and the ponds. Thus, the primary source of water within the northern ponds is riparian water that is diverted from the Kaweah River.

A conceptual representation of the inputs and outputs of the water balance for the northern ponds is shown on Figure 2C. The water inputs include groundwater inflow into the ponds from upgradient, rainfall onto the surface of the ponds, and riparian water~~possible inflow~~ from the Kaweah River. The water outputs include irrigation pumping, evaporation, and discharge to the Kaweah River. The purpose of evaluating the water balance for the northern ponds is to compare the amount of water available to the Kaweah River under current conditions versus post-project conditions.

On an annual basis, the amount of water in storage in the ponds does not change. Thus, the water-balance equation for the northern ponds is:

$$GF + R + IF = LE + Ir + D,$$

where GF is the groundwater inflow, R is the rainfall, IF is the riparian water diversion and potential subsurface inflow from the Kaweah River, LE is the lake evaporation, Ir is the irrigation water pumped from the ponds and applied to the project site, and D is the potential subsurface discharge to the Kaweah River.

The net flow to the Kaweah River (KR) from the northern ponds can also be defined as:

$$KR = D - IF.$$

Thus, the water-balance equation can be rewritten as:

$$GF + R = LE + Ir + KR.$$

For current, active-project, and post-project conditions, groundwater inflow (GF), rainfall (R), and lake evaporation (LE) remain the same. Thus, if the subscript 'c' is used for current conditions and the subscript "p" is used for post-project conditions, the water-balance comparison can be simplified to:

$$Ir_c + KR_c = Ir_p + Kr_p, \text{ or}$$

$$Ir_c - Ir_p = Kr_p - Kr_c.$$

The last equation states that the decrease in irrigation pumping from the northern ponds from current to post-project conditions is exactly the same as the increase in the net flow to the Kaweah River due to reduced diversions of riparian water under post-project conditions as compared to current conditions. The same relationship also applies to the active-project scenario.

Groundwater inflow into the northern ponds from the east is calculated in the same manner as for the 137-acre project site, as described in Section 3.1. For the northern ponds, however, the length of the upgradient boundary is 750 feet, as opposed to 4,000 feet for the 137-acre project site.

According to information provided by the property owner and Sierra-Pacific (2000), approximately 142 inches per year, or 11.83 ft/yr, of irrigation water is applied to the Stillwell pasture. For the current 137-acre pasture area, the irrigation pumping is 1,621 AF/yr. For the active-project scenario, where 100 acres are irrigated, the irrigation pumping will be 1,183 AF/yr, as shown in Table 2. Under post-project conditions, where a maximum of 48 acres will be irrigated, the irrigation pumping will be no more than 568 AF/yr. Therefore, the net increase in flow to the Kaweah River is 438 AF/yr under the active-project scenario as compared to current conditions and 1,053 AF/yr under post-project conditions as compared to current conditions. To complete the water balance for the project site, this discharge term must be added to the discharge term to the Kaweah River for the active-project and post-project water balances.

3.4 Water Balance

As described above, the water balance for the 137-acre project site can be used to define the discharge to the Kaweah River (D). As defined above, the discharge to the river is:

$$D = (GF + R + Ir) - (Ro + ET)$$

for current conditions, and:

$$D = (GF + R + Ir) - (Ro + ET + LE)$$

for the active-project scenario and post-project conditions.

Table 2 shows the values for each parameter in the equations. For current conditions, the total discharge to the Kaweah River is 1,310 AF/yr for the 137-acre project site. As discussed above, two active-project and post-project scenarios are evaluated due to uncertainties in the lake evaporation factor. For the active-project scenario on the 137-acre project site, the discharge to the river is 895 AF/yr using the NOAA lake evaporation factor and 874 AF/yr using the ACE lake evaporation factor. For post-project conditions on the 137-acre project site, the discharge to the Kaweah River is 318 AF/yr using the NOAA lake evaporation factor and 269 AF/yr using the ACE lake evaporation factor.

The total discharge to the Kaweah River for the active-project scenario and post-project conditions also includes the net increase from the northern ponds due to reduced irrigation pumping. Thus, the total discharge to the Kaweah River under the active-project scenario ranges from 1,312 AF/yr to 1,333 AF/yr, depending on the lake evaporation factor.

Comparing the current and active-project discharge amounts, the active project will result in a net increase of two AF/yr to 23 AF/yr in the amount of water discharged to the Kaweah River, as shown on the last page of Table 2. For post-project conditions, the total discharge to the Kaweah River ranges from 1,322 AF/yr to 1,371 AF/yr, depending on the lake evaporation factor. Comparing the current and post-project discharge amounts, the proposed project will result in a net increase of 12 AF/yr to 61 AF/yr in the amount of water discharged to the Kaweah River, as shown on the last page of Table 2.

4.0 IMPACTS ON FLOWS WITHIN THE KAWEAH RIVER

The Kaweah River is located approximately 400 feet northwestern of the proposed project. The land between the proposed project and the river is currently open pasture and is anticipated to remain the same after the project is completed. Over a one-year period from March 1999 to March 2000, the water level in the Kaweah River varied by only four feet (Sierra-Pacific, 2000, Table 4), as measured at the Highway 216 bridge. The water level in the river ranged from approximately 464 to 468 feet above mean sea level (ft amsl).

At the northern edge of the Stillwell pasture, the groundwater table, water level within the northern ponds, and the water level in the river (when flowing) are all approximately 483 ft amsl, as reflected in the water-level measurements from well MW-1 (Sierra-Pacific, 2000, Table 4). This elevation is about four feet below the native ground surface elevation.

Within the Stillwell pasture and the proposed project area, the groundwater table is approximately three to six feet below ground surface. The groundwater surface elevation ranges from approximately 479 to over 485 ft amsl beneath the pasture. The groundwater surface elevation beneath the pasture in the project area is about 15 feet higher than the water level in the Kaweah River at the Highway 216 bridge, as illustrated on Figure 3. Figure 3 is based on data measured by Sierra-Pacific (2000, Table 4) between March 1999 and March 2000. The water-level data are consistent with the water-balance calculations that indicate a large amount of discharge from the Stillwell pasture to the Kaweah River under current conditions.

During the proposed gravel-mining operations, excavation is not expected to extend deeper than 35 feet below ground surface, on average. Since the water table is about five feet below ground surface, the total drawdown in the water table from dewatering will be about 30 feet within the four individual gravel pits. The base of each pit will be about 15 feet below the water level in the river (see Figure 4). Dewatering will occur in only one of the four pits at any one time.

The aquifer parameters and analytical calculations described in Section 2.0 can be used to evaluate the estimated drawdown from dewatering in the area between a dewatered pit and the river. The data and calculations indicate that at a distance of 200 feet from the pit (i.e. half-way between one of the western pits and the river), the total drawdown will be approximately 12 feet. Thus, the groundwater table will be higher than the water level in the river, preventing the flow of water from the river to a dewatered pit during the mining operations, as illustrated on Figure 4.

The water pumped from the dewatered pit may be pumped to several different locations. While mining is occurring along the east side of the project site, some of the water will be pumped to a trench along the eastern boundary of the pasture to maintain the water level in nearby shallow private wells (see Section 5.0). This use is expected to require only a fraction of the total amount of water pumped for dewatering. The water not pumped to the trench is expected to be pumped into the northern ponds or the lakes formed by the previous project phases. During gravel mining, there will be a net increase of water in the river, due to a reduction in the amount of irrigation water pumped from the northern ponds, as discussed for the active-project scenario in Section 3.0.

As discussed in Section 3.0, under post-project conditions, there will be a significant reduction in the amount of irrigation water pumped from the northern ponds. The decrease in irrigation pumping results in a net increase in the total water flow within the Kaweah River under post-project conditions as compared to current conditions, as discussed in Section 3.4 and shown in Table 2.

As discussed above and in Section 3.4, the proposed project will not result in a decrease in water flows within the Kaweah River during or after the gravel mining operations.

5.0 POTENTIAL IMPACTS ON NEARBY SHALLOW PRIVATE WELLS

As shown by Sierra-Pacific (2000), there are at least 19 private supply wells located to the east and south of the project site. According to the information provided by Sierra-Pacific (2000, Appendix E), less than half of these wells are completed in the shallow alluvial sediments. The remaining wells are completed within the deeper bedrock aquifer. Groundwater is typically not encountered in the bedrock until depths of 60 feet below ground surface or greater are reached, while the base of the alluvium is approximately 30 feet below ground surface to 40 feet below ground surface. The water levels in the bedrock wells typically stabilize at depths much shallower than 60 feet below ground surface, indicating artesian conditions within the bedrock. The upper section of bedrock is either unfractured or the fractures are cemented or filled with fine-grained material from the overlying alluvium. This information demonstrates that the groundwater within the shallow alluvial sediments is not in hydraulic communication with the bedrock aquifer and that the proposed project should not have any measurable impact on the deeper wells.

Many of the shallow private wells are located within 200 to 400 feet of the boundary of the proposed project. During mining and dewatering of the eastern two gravel pits, it is possible that water levels within the shallow private wells could be lowered unless some type of mitigation measure is implemented. To prevent the lowering of water levels within the shallow wells, a shallow trench will be installed along the eastern project boundary to a depth of six feet or deeper. Water pumped from the active pit will be piped to the shallow trench to maintain the groundwater table east of the project site.

The effectiveness of using a trench to maintain water levels in the shallow wells east of the project boundary was evaluated as part of the aquifer pumping tests conducted at the site by Sierra-Pacific (2000). After completion of the initial 72-hr test in well E-1, a second 72-hr test was conducted in well E-1. During the first E-1 test, the pumped water was piped to a location approximately 500 feet west of the pumping well. During the second E-1 test, the pumped water was piped to a shallow trench located between the pumping well, E-1, and monitoring point T-6. The data from the first and second E-1 tests are shown on Figure 5. Monitoring point T-3 is located approximately 150 feet northeast of E-1. The trench and monitoring point T-6 are located approximately 75 feet and 150 feet southwest of E-1, respectively. During the first test, measurable drawdown was observed at both T-3 and T-6 from the pumping at E-1. During the second test, drawdown was not observed at T-6 due to the recharge occurring at the trench, as shown on Figure 5.

Based on the data shown on Figure 5, use of the shallow trench will prevent a drop in water levels within the private wells that might otherwise be caused during the gravel mining operations. For the Stillwell project, a recharge trench was selected as the appropriate method to maintain water levels at the upgradient neighboring properties. The water pumped to the recharge trench will maintain the water-level elevation and, thus, the hydraulic gradient at the neighboring properties. Therefore, the water available to the neighboring wells will remain the same and will come from groundwater flow entering the neighboring properties from upgradient, which is the same source of water currently entering these wells. The water pumped to the recharge trench from the quarry will not flow upgradient to the neighboring wells, it will flow back into the quarry.

For other proposed mining projects in the area, cut-off walls have been proposed to reduce infiltration into the mine pit. Use of cut-off walls is not considered appropriate for the Stillwell site for several reasons. First, the proposed Stillwell quarry is substantially shallower than the other proposed projects where cut-off walls have been proposed. Second, use of a cut-off wall on the upgradient side of the Stillwell quarry would cause groundwater levels to rise under the neighboring properties. Since the water table is only a few feet from the ground surface, this rise in the water table could potentially cause flooding of the neighboring properties. Third, only a limited amount of water is expected to enter the quarry from upgradient, as discussed above. In addition, use of a cut-off wall to prevent inflow from the Kaweah River during dewatering is unnecessary, as discussed above in Section 3.3. Specifically, when the Northern Ponds are pumped for irrigation, little or no water percolates into the ponds from the river.

After the gravel mining is completed, the resulting lake will be allowed to fill. ~~Once the lake level reaches an equilibrium with the natural groundwater level, the trench is not needed to~~

~~maintain the water level at the upgradient shallow wells. Thus, there is no anticipated impact to the priate wells under post-project conditions and the trench will only need to be used while gravel mining operations are occurring.~~ Groundwater elevations at the northeast, upgradient side of the proposed quarry are approximately 484 feet above mean sea level (ft amsl). Groundwater elevations at the southwest, downgradient side of the proposed quarry are approximately 477 ft amsl. Thus, there is approximately seven feet of difference in the groundwater elevation across the proposed project area.

Once the project is completed, the water surface in the lake will stabilize at an elevation that is at an equilibrium between the rate of groundwater inflow from upgradient and the rate of groundwater outflow downgradient. This will result in the upgradient edge of the lake being at an elevation below the adjacent groundwater table, and the downgradient edge of the lake being at an elevation slightly above the previous groundwater table. The downgradient edge of the lake, however, can not rise significantly because the hydraulic gradient in the aquifer would then increase, resulting in an increased rate of groundwater outflow. However, since the lake elevation will not affect the rate of groundwater movement at some distance upgradient of the quarry, the rate of groundwater inflow will not increase. Thus, the lake will reach an equilibrium point at an elevation that maintains the rate of groundwater outflow at about the rate of pre-project groundwater movement. This rate occurs when the lake elevation is at about the same elevation as the current groundwater elevation at the downgradient edge of the project area.

To reduce the overall drop in water surface elevation across the lake, a north-south trending berm will be placed across the eastern third of the lake, as shown on Figure C-1. The east part of the lake will then have a surface elevation of approximately 483.5 ft amsl. The west lake will then have a surface elevation of between 477 ft amsl and 480 ft amsl, which is approximately the same as the current groundwater elevation. In addition, a recharge trench will be constructed along the southeast corner of the project area. Through a series of weirs, water will flow from the east lake to the west lake and maintain the current groundwater elevations along the properties to the southeast of the project area.

The berm will also have the added benefit of reducing wind fetch and wave erosion in the lakes.

To verify the effectiveness of the trench and subsequent lake in maintaining groundwater elevations upgradient of the project site, a groundwater monitoring program will be conducted. It is anticipated that this program would include measurement of water levels in the existing on-site wells and either in several of the off-site private wells or in two to three additional piezometers to be installed on the Stillwell property specifically for this purpose. Water levels would be measured at least quarterly.

Elevated levels of nitrate and iron have also been detected in some of the wells at the site.

Elevated levels of nitrate have been detected in wells MW-2, MW-3, and T-3 (Sierra-Pacific, 2000, Table 7). The nitrate concentrations, however, do not exceed regulatory standards. The highest nitrate concentrations have been detected in MW-2. MW-2 is located east of the project site, downgradient of a cluster of residences. MW-2 also contains noticeably elevated levels of sulfate and chloride as compared to other wells at the project site. The nitrate, sulfate, and chloride are most likely present due to the use of septic systems in the area and/or the application of agricultural fertilizers.

Elevated levels of ferrous iron have been detected in wells MW-1, MW-2, MW-3, and T-3 (Sierra-Pacific, 2000, Table 8). The highest concentrations occur in MW-1 and T-3. MW-1 is located adjacent to the Kaweah River and northern ponds. T-3 is located in the south-central part of the Stillwell pasture.

Pumping of water from the mining pit into a trench along the upgradient side of the project will not reduce water quality at the neighboring properties for two reasons. First, as discussed above, most of the water pumped into the trench will flow back into the quarry pit. Second, the water pumped from the quarry to the trench will be representative of the water quality from the upgradient neighboring properties. Pumping the water to the trench, in fact, is likely to remove much of the ferrous iron, resulting in an improvement in water quality.

It is uncertain whether the water pumped from the active pit during mining operations and piped to the trench will contain elevated levels of nitrate, iron, or other constituents. To address this issue, the pumped water should be monitored for iron, nitrate, and other constituents when mining begins. The monitoring will be conducted to verify that constituent concentrations in the water pumped to the trench are within ambient levels identified at the time the trench is excavated. If the water pumped from the currently-active pit contains elevated constituent levels (i.e. concentrations higher than those at the upgradient properties), then water from an alternate source will be pumped to the trench. Alternate sources include the 50-acre northern ponds and previous gravel pits within the project site.

If an acceptable alternate source can not be identified, another possible option is to pump the water from the dewatered gravel pit through a small aeration pond prior to discharge to the trench. The aeration of the water should cause the iron to precipitate from the pumped groundwater and improve the water quality. If needed, the aeration pond could be located in the 300-foot diameter area that will not be mined around the high-tension powerline tower within the project area.

6.0 SUMMARY AND CONCLUSIONS

This Hydrogeologic Data Evaluation Report has been prepared to analyze a proposed gravel mining operation at the Stillwell Pasture near Lemoncove, California. The purpose of this report is to provide a hydrogeologic evaluation of four specific technical issues related to the proposed project. These issues are:

- X Estimation of aquifer parameters based on aquifer pumping tests conducted at the project site;
- X Calculation of a water balance for the proposed project site to compare current, active-project, and post-project conditions;
- X Conduct a hydrogeologic assessment of the potential impacts of the proposed project on water flows within the adjacent Kaweah River; and
- X Conduct a hydrogeologic assessment of the potential impacts of the proposed project on nearby shallow private wells.

The findings of this evaluation for each of the four issues is summarized below.

Aquifer Parameters

Aquifer pumping tests have been conducted using two different pumping wells at the project site. These wells are designated as well E-1 and E-3. Well E-3 has also been referred to as the 'Schmidt Well' in other reports.

The data from a 72-hour pumping test in well E-1 indicates that the average transmissivity of the shallow aquifer at the site is approximately 21,000 ft^2/day, or 155,000 gpd/ft. The data from the pumping test in well E-3 indicates that the average transmissivity is about 2,275 ft^2/day, or 17,000 gpd/ft. An analytical simulation of the E-1 and E-3 aquifer test results indicates that well E-3 is much more efficient than well E-1. Thus, the results of the E-3 aquifer pumping test are considered most representative of actual aquifer conditions at the project site. Based on the interpretation of the aquifer test data and the analytical simulation, the transmissivity of the aquifer is in the range of 2,275 ft^2/day, or 17,000 gpd/ft.

Water Balance

The water balance was conducted to evaluate the potential impacts of the project on groundwater supplies and groundwater discharge to the Kaweah River. For this project, the water inputs include groundwater inflow within the alluvium that enters the upgradient (eastern) edge of the Stillwell pasture, rainfall, and irrigation water applied to the pasture. Water outputs include surface runoff, evapotranspiration of applied irrigation water from the pasture, evaporation from surface-water bodies, and groundwater discharge to the Kaweah River at the downgradient (western) edge of the project site. A water balance has been conducted for current conditions, an active-project scenario, and post-project conditions.

There are two valid pan factors for lake evaporation that can be used for this project. One was developed by NOAA and the other was developed by the ACE. Due to the uncertainty in the local pan factor for lake evaporation, the water balance is conducted using both factors.

For the proposed project, evaluation of the potential impact to the Kaweah River is not limited to the project site. Since the 137-acre Stillwell pasture is irrigated with water from the 50-acre northern ponds, the total impact on the Kaweah River must also include an evaluation of the water balance for the northern ponds. The water balance for the northern ponds varies for each scenario based on the amount of irrigation water pumped to irrigate the available pasture land within the 137-acre project site.

For current conditions, the total discharge to the Kaweah River is 1,310 AF/yr for the 137-acre project site. As discussed above, two active-project and post-project scenarios are evaluated due to uncertainties in the lake evaporation factor. For the active-project scenario on the 137-acre project site, the discharge to the river is 895 AF/yr using the NOAA lake evaporation factor and 874 AF/yr using the ACE lake evaporation factor. For post-project conditions on the 137-acre project site, the discharge to the Kaweah River is 318 AF/yr using the NOAA lake evaporation factor and 269 AF/yr using the ACE lake evaporation factor.

The total discharge to the Kaweah River for the active-project scenario and post-project conditions, however, must also include the net increase from the northern ponds due to reduced use of riparian water from the river for irrigation ~~pumping~~. Thus, the total discharge to the Kaweah River under the active-project scenario ranges from 1,312 AF/yr to 1,333 AF/yr, depending on the lake evaporation factor. Comparing the current and active-project discharge amounts, the active project will result in a net increase of two AF/yr to 23 AF/yr in the amount of water discharged to the Kaweah River. For post-project conditions, the total discharge to the Kaweah River ranges from 1,322 AF/yr to 1,371 AF/yr, depending on the lake evaporation factor. Comparing the current and post-project discharge amounts, the proposed project will result in a net increase of 12 AF/yr to 61 AF/yr in the amount of water discharged to the Kaweah River.

Potential Impacts on Flows Within the Kaweah River

The groundwater surface elevation beneath the pasture in the project area is about 15 feet higher than the water level in the Kaweah River at the Highway 216 bridge. This 15-foot difference in water levels between the pasture and the river are consistent with the water-balance calculations that indicate a large amount of discharge from the Stillwell pasture to the Kaweah River under current conditions.

Active mining will not occur closer than 400 feet from the Kaweah River. Groundwater data from the site and calculations based on the aquifer parameters discussed above, indicate that the water level under the pasture, between the river and the active pit, will remain higher than the water level in the river during mining. Thus, water will not flow from the river to the dewatered pit during mining.

Based on the water balance calculations, the active-project scenario and post-project conditions will result in a net increase of flow within the Kaweah River. Therefore, the proposed project will have a positive impact on flows within the Kaweah River.

Potential Impacts on Nearby Shallow Private Wells

The primary potential impact on nearby shallow private wells is the possible reduction in the groundwater table during dewatering of an adjacent active pit. To mitigate this potential impact, a shallow trench will be installed between the active pit and the private wells. Water pumped to this trench will maintain the groundwater table in the area of the private wells, as demonstrated by the results of an aquifer pumping test.

The presence of iron, nitrate, and other constituents in groundwater at the site is from upgradient off-site sources such as domestic septic systems and agriculture. To prevent any change in water quality in the nearby wells, the pumped water will be monitored to verify that it is within the ambient conditions present at the time the trench was excavated. If necessary, water from an alternate source will be pumped to the trench or the water will be aerated prior to pumping to trench to maintain ambient conditions.

The use of the trench on the eastern property boundary and, if necessary, an alternate water source or aeration pond, will prevent any reduction of water quantity or quality available to the users of the shallow wells during active gravel mining. It is recommended that a groundwater monitoring program be implemented to verify that water levels are maintained by the trench and that water quality is not adversely affected.

7.0 REFERENCES

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Table 1
Stillwell Pasture Aquifer Test Results
RMC Pacific Materials

1st 72-Hour Test

Observation Point	Transmissivity			Storativity	Hydraulic Conductivity			Comments
	ft^2/min	ft^2/day	gal/day/ft		ft/min	ft/day	cm/sec	
T-1								no response
T-2	13.22	19036.8	142395.3	0.0038	3.78E-01	543.91	1.92E-01	
T-3	14.64	21081.6	157690.4	0.0018	4.18E-01	602.33	2.12E-01	
T-4	16.99	24465.6	183002.7	0.0059	4.85E-01	699.02	2.47E-01	
T-5								no response
T-6	11.83	17035.2	127423.3	0.0044	3.38E-01	486.72	1.72E-01	limited response
T-7	18.73	26971.2	201744.6	0.0054	5.35E-01	770.61	2.72E-01	
Mean (T-2, T-3, T-4, T-6	14.17	20404.8	152627.9	0.0040	4.05E-01	582.99	2.06E-01	
Mean (All Data)	15.08	21718.1	162451.2	0.0043	4.31E-01	620.52	2.19E-01	

Schmidt Well 13-Hour Test

Observation Point	Transmissivity			Storativity	Hydraulic Conductivity			Comments
	ft^2/min	ft^2/day	gal/day/ft		ft/min	ft/day	cm/sec	
E-1	1.46	2102.4	15726.0	0.0120	4.17E-02	60.07	2.12E-02	
T-3	1.75	2512.8	18795.7	0.0242	4.99E-02	71.79	2.53E-02	
T-4	1.54	2210.4	16533.8	0.0377	4.39E-02	63.15	2.23E-02	
E-3	0.17	251.1	1878.5	NA	4.98E-03	7.18	2.53E-03	Pumping Well
Mean (E-1, T-3, T-4)	1.58	2275.2	17018.5	0.0246	4.51E-02	65.01	2.29E-02	
Mean (All Data)	1.23	1769.2	13233.5	0.0185	3.51E-02	50.55	1.78E-02	

TABLE 2
Water Balance Calculations
Stillwell Pasture

137-ACRE PROJECT SITE

Current Conditions

INPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)
Rainfall	1.18	1	137	161.7
Groundwater Flow				266.9
Irrigation	11.83	1	137	1620.7
Total Inputs				2049.3

OUTPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)	
Runoff	1.18	0.1	137	16.2	
ET	6.88	0.77	137	725.8	
Discharge to River				to be calculated	
Total Outputs				741.9	plus Discharge to River

Discharge to River = Total Inputs - Total Outputs = 2049.3 - 741.9 = 1307.3 AF/yr

Active Project Conditions

INPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)
Rainfall	1.18	1	137	161.7
Groundwater Flow				266.9
Irrigation	11.83	1	100	1183.0
Total Inputs				1611.6

OUTPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)	
Runoff	1.18	0.1	73.5	8.7	
ET	6.88	0.77	100	529.8	
Evaporation (NOAA)	6.88	0.7	37	178.2	
Evaporation (ACE)	6.88	0.78	37	198.6	
Discharge to River				to be calculated	
Total Outputs (NOAA)				716.6	plus Discharge to River
Total Outputs (ACE)				737.0	plus Discharge to River

Discharge to River = Total Inputs - Total Outputs = 1611.6 - 716.6 = 894.9 AF/yr (NOAA)
Discharge to River = Total Inputs - Total Outputs = 1611.6 - 737.0 = 874.6 AF/yr (ACE)

Post-Project Conditions

INPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)
Rainfall	1.18	1	137	161.7
Groundwater Flow				266.9
Irrigation	11.83	1	48	567.8
Total Inputs				996.4

OUTPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)	
Runoff	1.18	0.1	6	0.7	
ET	6.88	0.77	48	254.3	
Evaporation (NOAA)	6.88	0.7	89	428.6	
Evaporation (ACE)	6.88	0.78	89	477.6	
Discharge to River				to be calculated	
Total Outputs (NOAA)				683.6	plus Discharge to River
Total Outputs (ACE)				732.6	plus Discharge to River

Discharge to River = Total Inputs - Total Outputs = 996.4 - 683.6 = 312.8 AF/yr (NOAA)
Discharge to River = Total Inputs - Total Outputs = 996.4 - 732.6 = 263.8 AF/yr (ACE)

TABLE 2
Water Balance Calculations
Stillwell Pasture

50-ACRE NORTHERN PONDS

Current Conditions

INPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)
Rainfall	1.18	1	50	59.0
Groundwater Flow				50.0
Total Inputs				109.0

OUTPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)	
Irrigation Pumping	11.83	1	137	1620.7	
Evaporation (NOAA)	6.88	0.7	50	240.8	
Discharge to River				to be calculated	
Total Outputs				1861.5	plus Discharge to River

Discharge to River = Total Inputs - Total Outputs = 109.0 - 1861.5 = -1752.5 AF/yr

Active Project Conditions

INPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)
Rainfall	1.18	1	50	59.0
Groundwater Flow				50.0
Total Inputs				109.0

OUTPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)	
Irrigation Pumping	11.83	1	100	1183.0	
Evaporation (NOAA)	6.88	0.7	50	240.8	
Discharge to River				to be calculated	
Total Outputs				1423.8	plus Discharge to River

Discharge to River = Total Inputs - Total Outputs = 109.0 - 1423.8 = -1314.8 AF/yr

Net Increase in Discharge to River = -1314.8 - (-1752.5) = 437.7 AF/yr

Post-Project Conditions

INPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)
Rainfall	1.18	1	50	59.0
Groundwater Flow				50.0
Total Inputs				109.0

OUTPUTS	Depth (ft/yr)	Factor	Area (ac)	Total (AF/yr)	
Irrigation Pumping	11.83	1	48	567.8	
Evaporation (NOAA)	6.88	0.7	50	240.8	
Discharge to River				to be calculated	
Total Outputs				808.6	plus Discharge to River

Discharge to River = Total Inputs - Total Outputs = 109.0 - 808.6 = -699.6 AF/yr

Net Increase in Discharge to River = -699.6 - (-1752.5) = 1052.9 AF/yr

TABLE 2
Water Balance Calculations
Stillwell Pasture

TOTAL PROJECT IMPACTS		
Active Project Defined as 137-acre Active Project Discharge minus 137-acre Current Discharge plus 50-acre Net Increase in Discharge:		
NOAA:	894.9 - 1307.3 + 437.7=	25.3 AF/yr
ACE:	874.6 - 1307.3 + 437.7=	4.9 AF/yr
Post-Project Defined as 137-acre Post-Project Discharge minus 137-acre Current Discharge plus 50-acre Net Increase in Discharge:		
NOAA:	312.8 - 1307.3 + 1052.9 =	58.3 AF/yr
ACE:	263.8 - 1307.3 + 1052.9 =	9.3 AF/yr

TABLE C-1
Comparison of Pan Evaporation and Evapotranspiration (ET) Data

Column	A	B	C	D	E
	Average Pan Evaporation (2)	Measured Pasture ET (3)	Pasture ET to Pan Evap	DWR-Recommended Pasture ET to Pan	DWR-Estimated Growing Season
Month	(inches)	(inches)	Ratio (4)	Evap Ratio (5)	ET (inches) (6)
January	1.3	0.7	0.54	0.71	
February	2.3	1.8	0.78	0.74	
March	4.2	3.7	0.88	0.76	3.2
April	5.9	4.6	0.78	0.77	4.5
May	8.3	6.7	0.81	0.78	6.5
June	9.6	7.2	0.75	0.78	7.5
July	10.0	8.0	0.80	0.78	7.8
August	8.5	7.3	0.86	0.78	6.6
September	6.3	5.3	0.84	0.77	4.8
October	4.4	3.6	0.82	0.75	3.3
November	2.1	1.7	0.81	0.73	
December	1.0	0.9	0.90	0.70	
Growing Season (1)	57.2	46.4	0.81		44.2
Annual	63.9	51.5	0.81	0.77	

NOTES:
(1) March through October
(2) For the San Joaquin Valley, from Table 1 of DWR Bulletin No. 113-3
(3) Average measured at Arvin in the San Joaquin Valley, from Table 4 of DWR Bulletin No. 113-3
(4) Calculated from Columns A and B
(5) For irrigated pasture, from Table 5 of DWR Bulletin No. 113-3
(6) For irrigated pasture, from Table 24 of DWR Bulletin No. 113-3

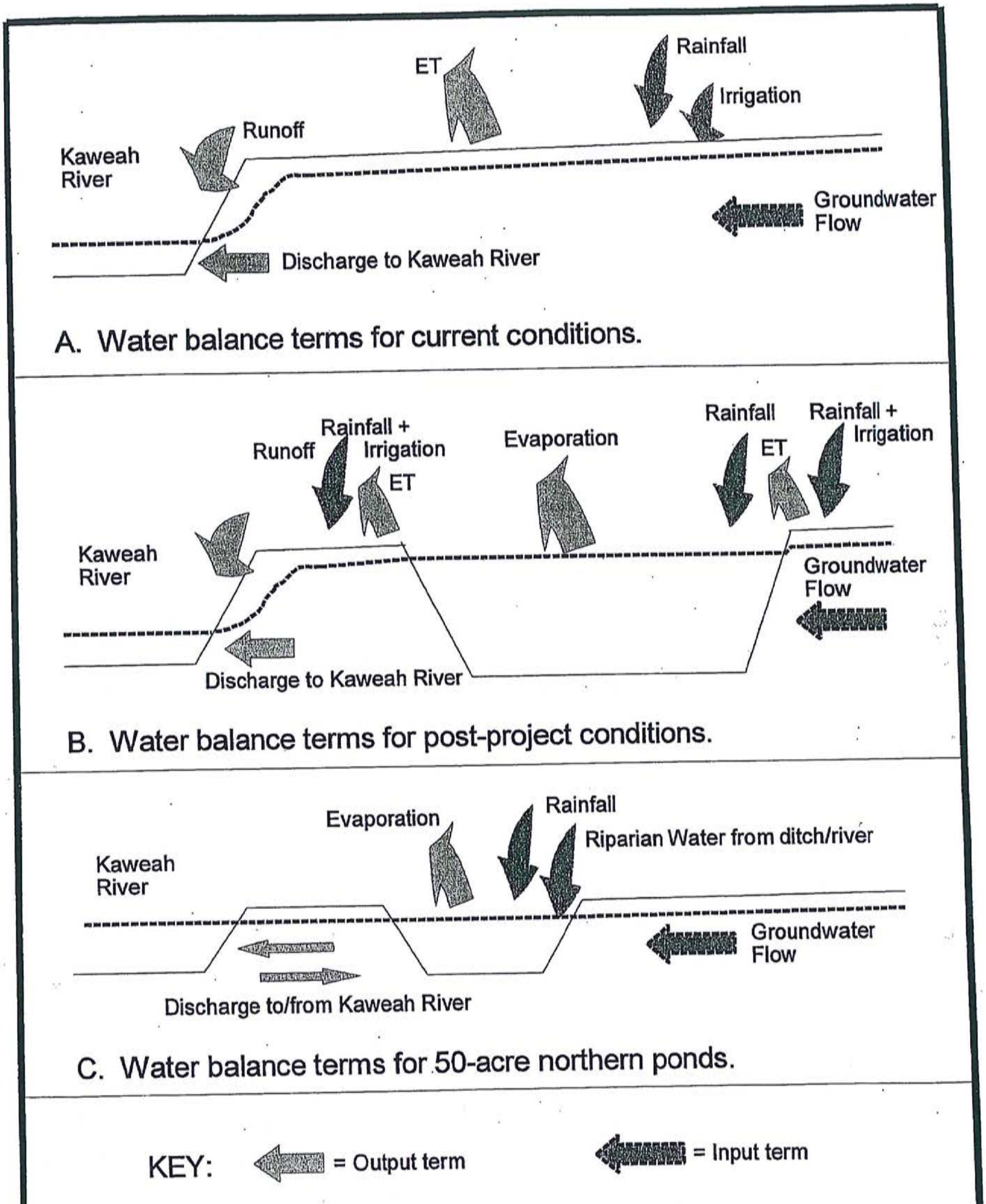


Figure 1. Water balance terms for Stillwell Pasture area.

Figure 2 - Pasture & River

Comparison of Water Level Elevations

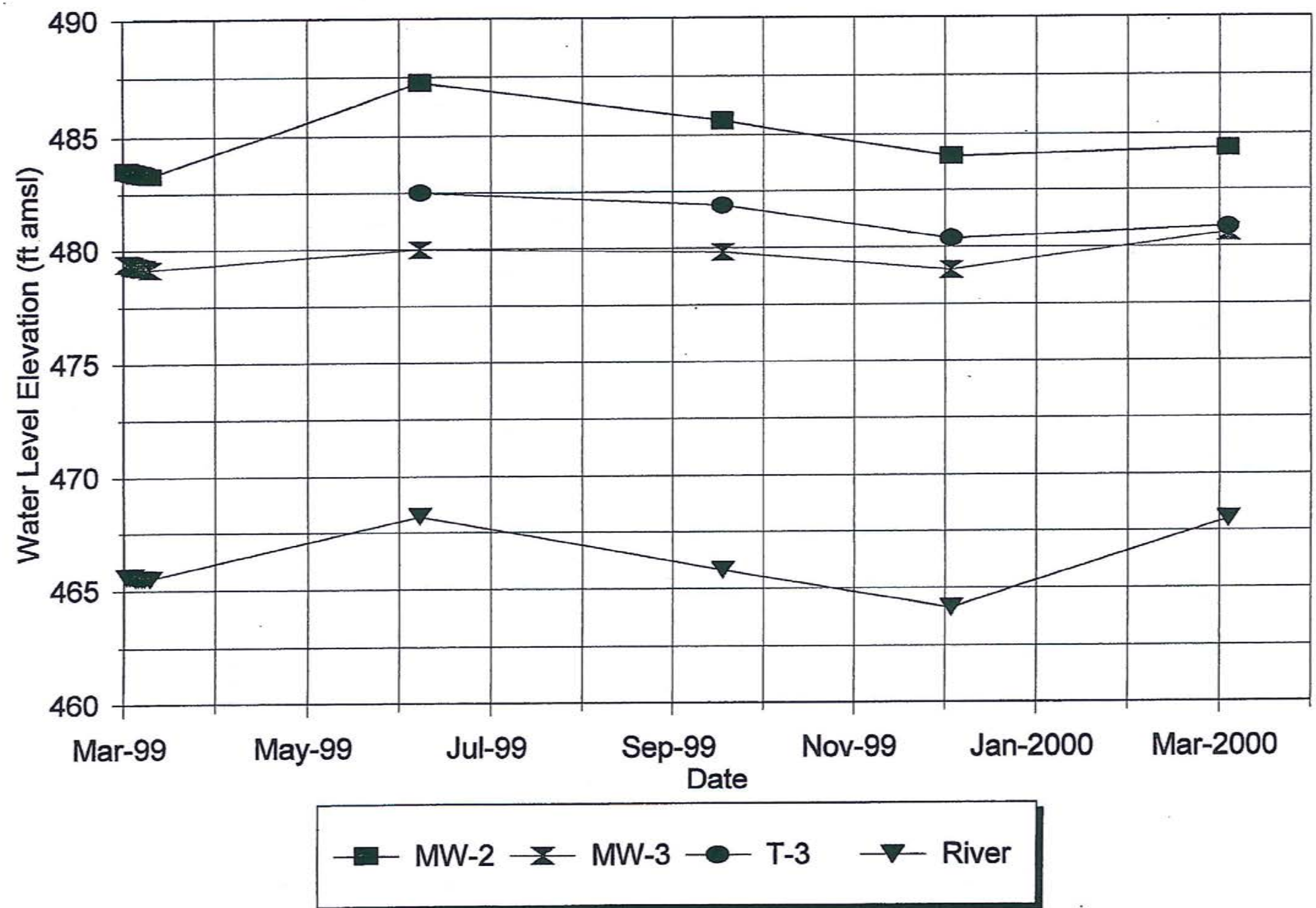


Figure 3

Drawdown From Pit Dewatering

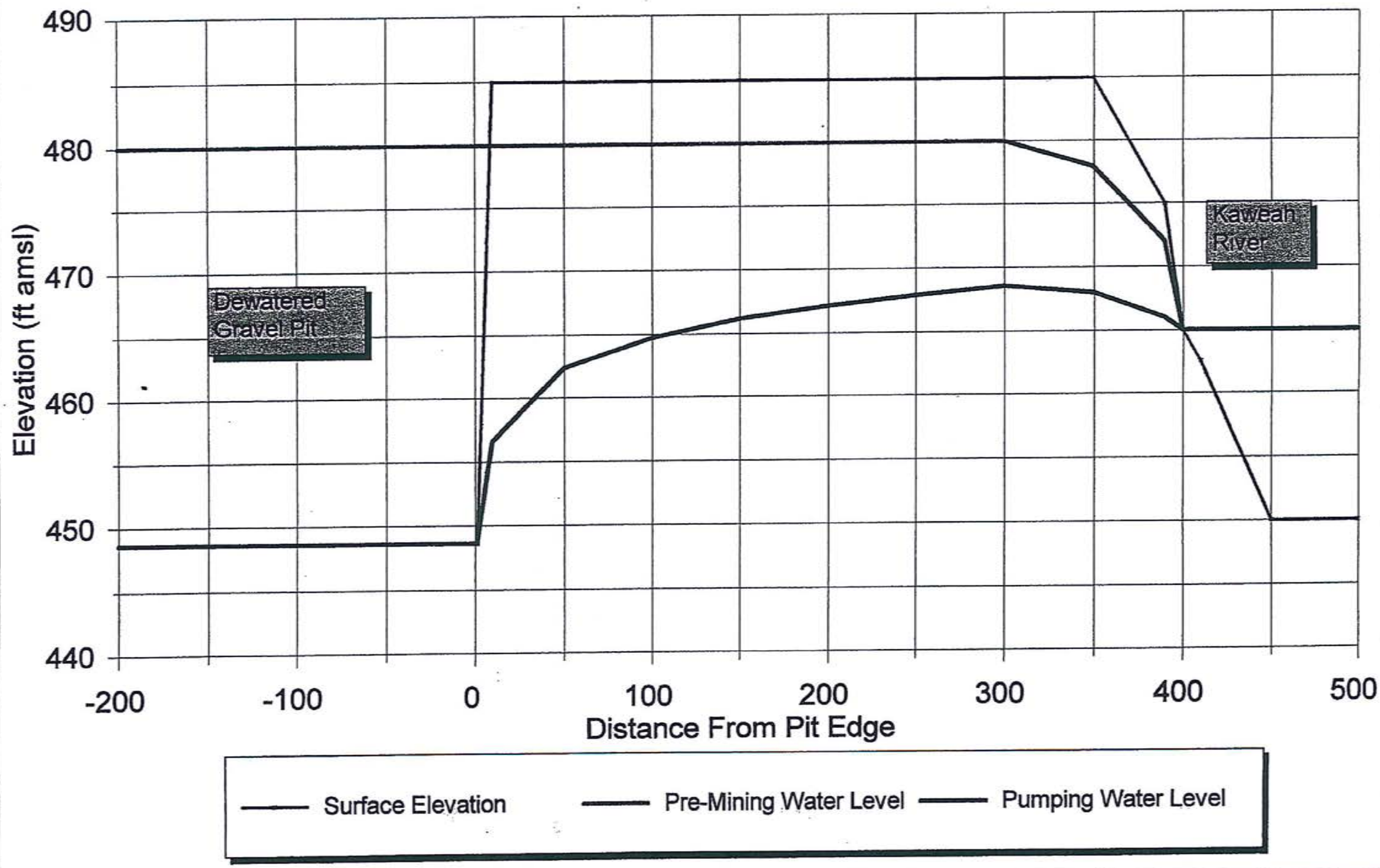
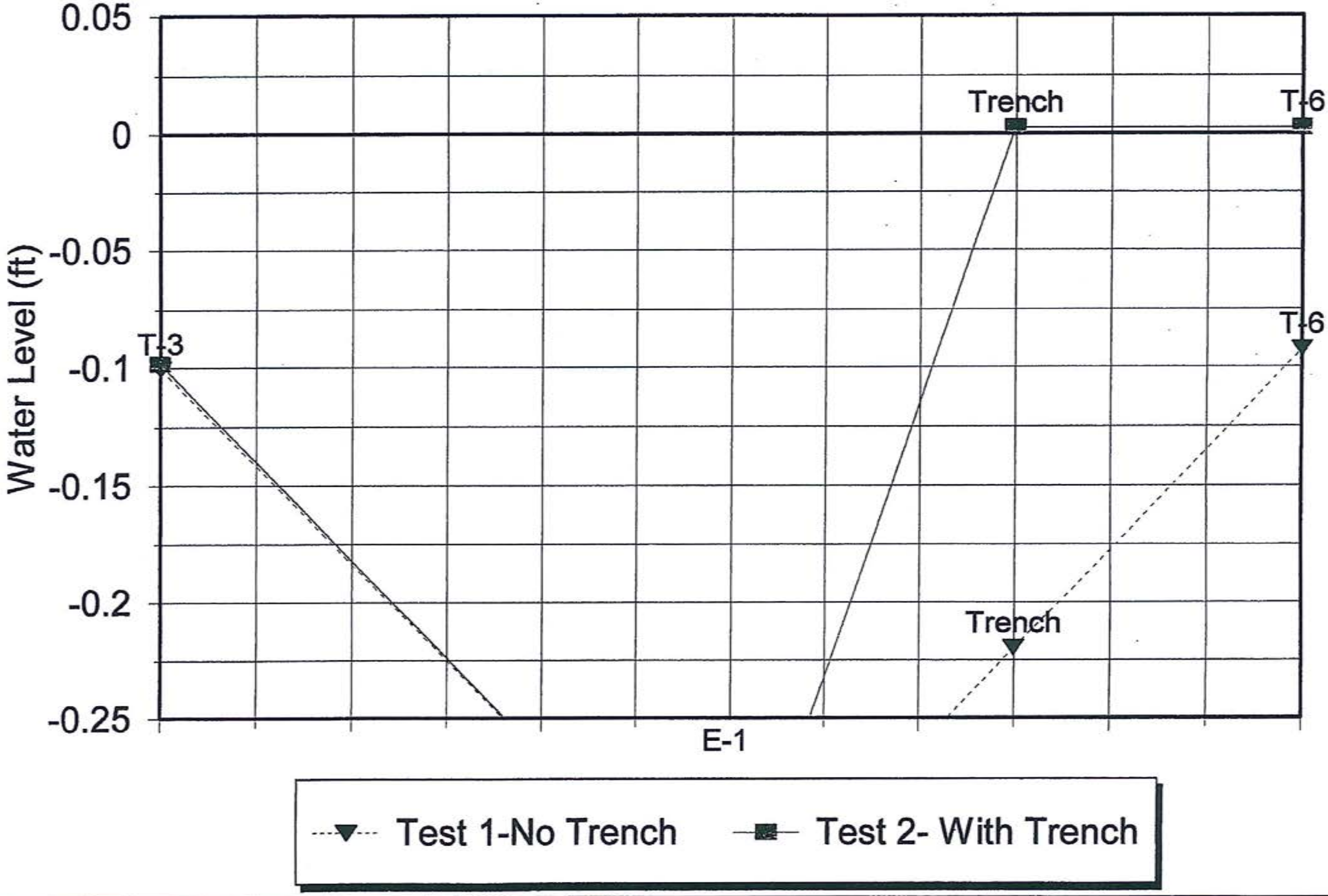


Figure 4 - Recharge Trench

Change in Water Levels



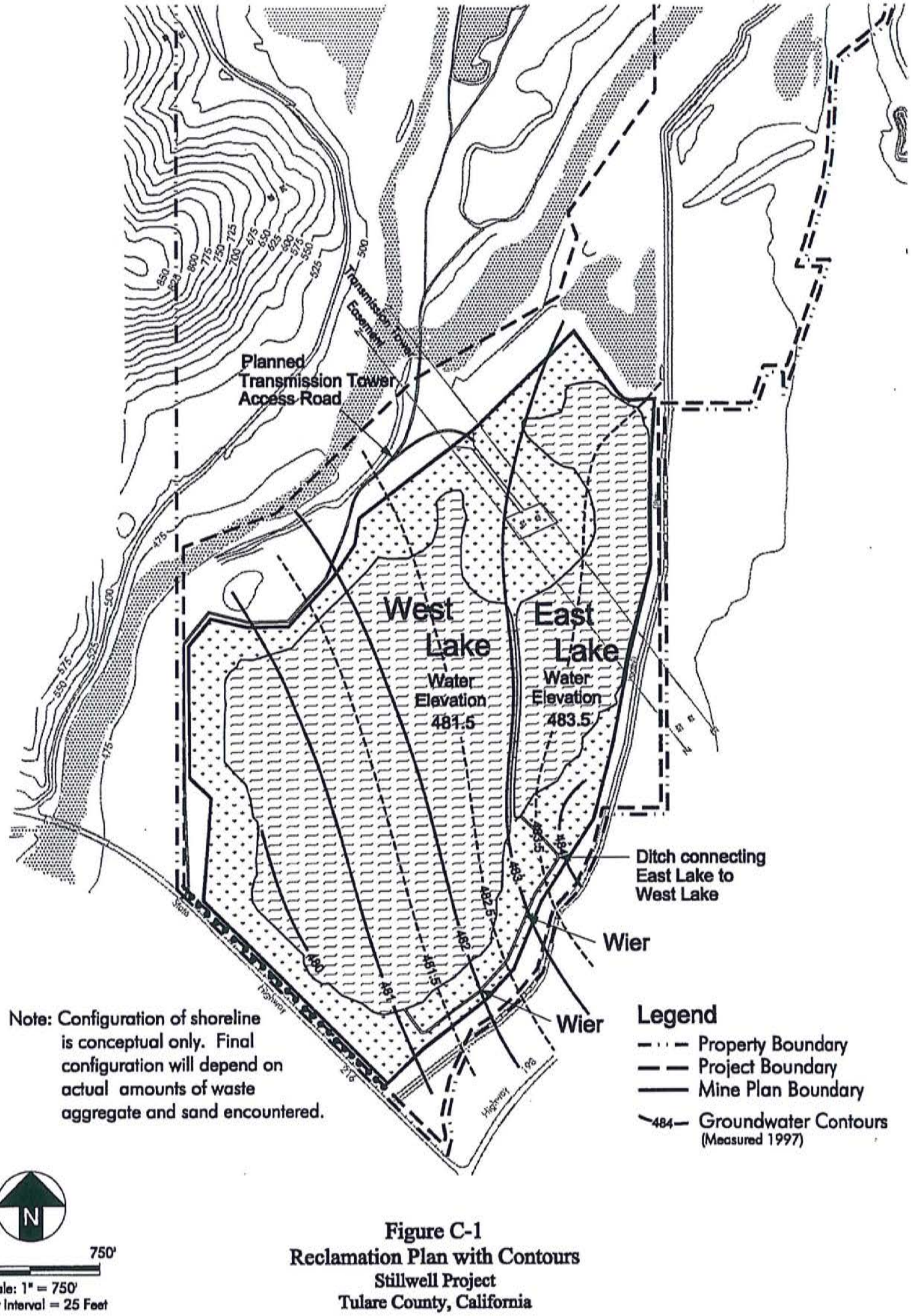
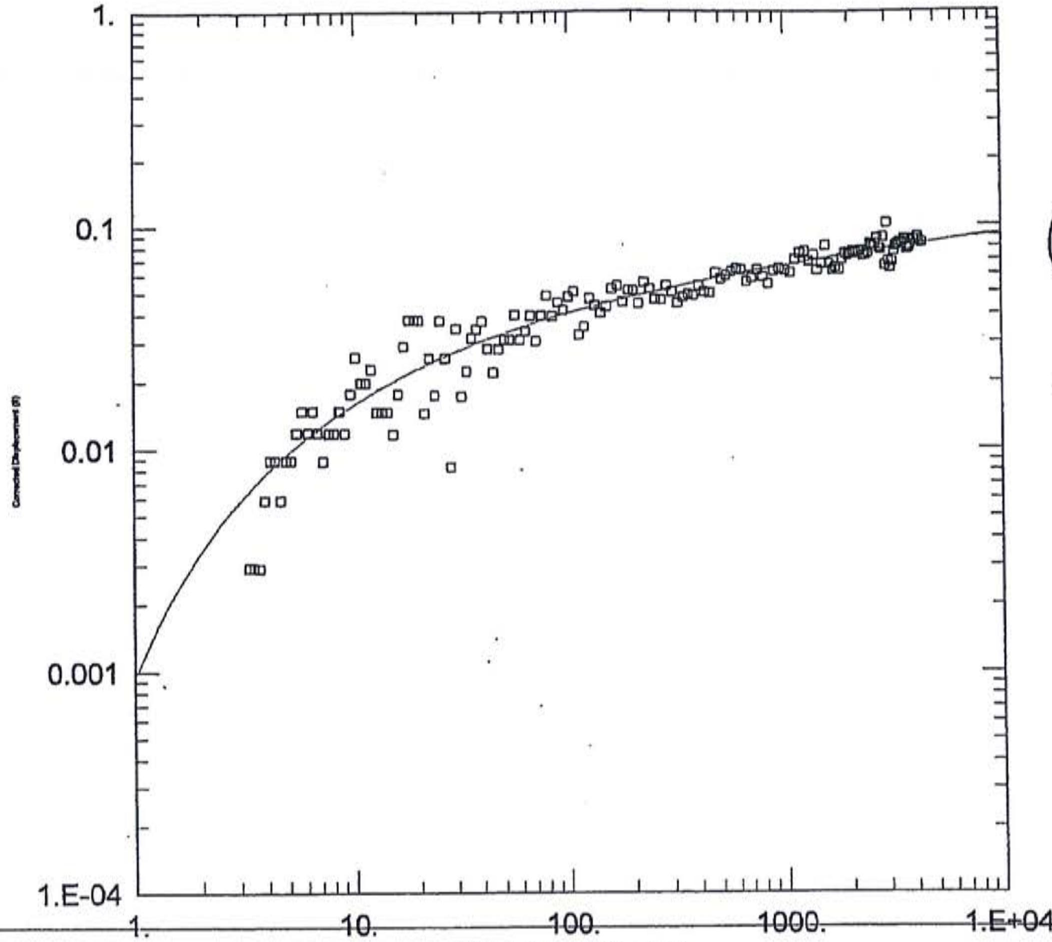


Figure C-1
Reclamation Plan with Contours
Stillwell Project
Tulare County, California

ATTACHMENT A



A

LEMONCOVE T-2

Data Set: D:\FILES\RMCLON~1\LEMONC~1\1ST_T2.AQT
Date: 09/12/00 Time: 16:14:17

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-1

AQUIFER DATA

Saturated Thickness: 35. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-1	0	0

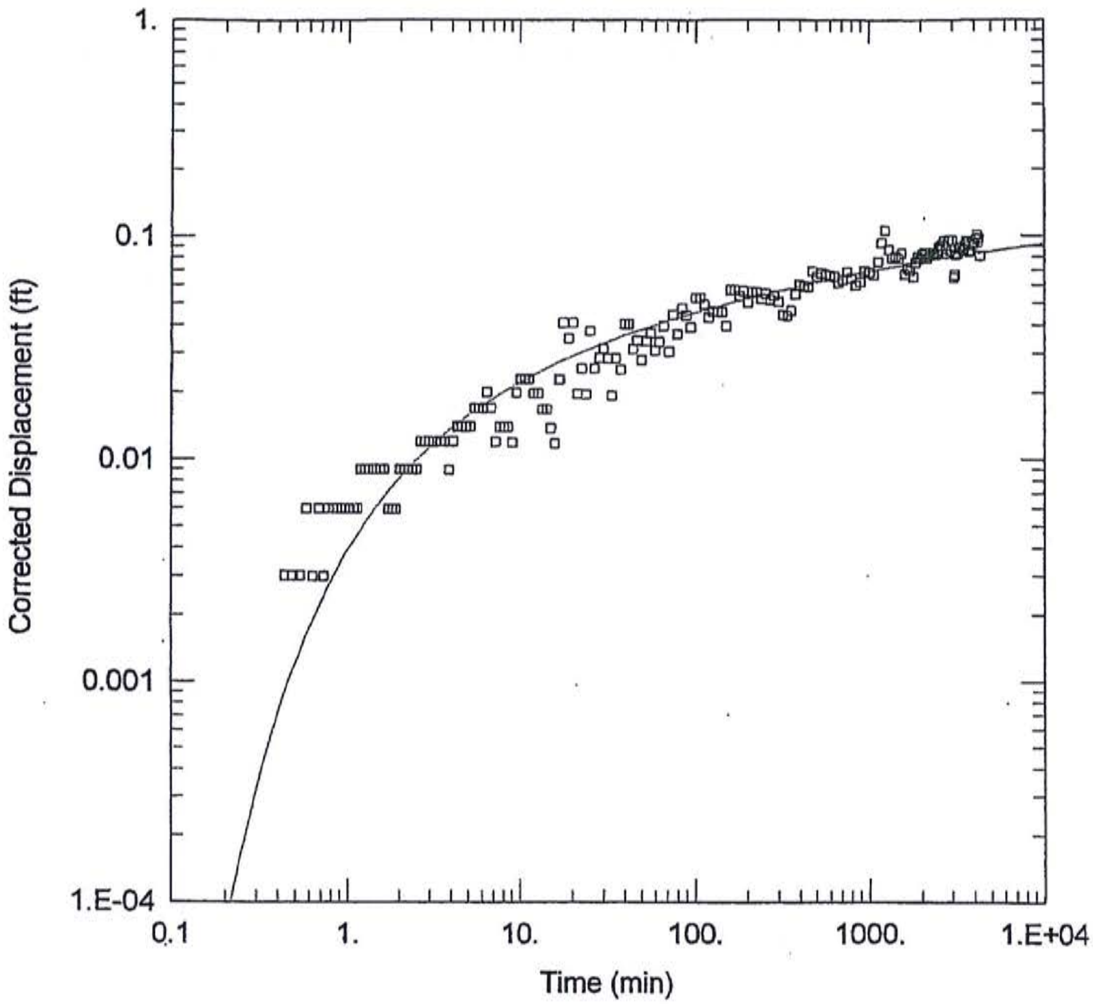
Observation Wells

Well Name	X (ft)	Y (ft)
▫ T-2	0	150

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

$T = 13.22\ ft^2/min$
$S = 0.00379$



LEMONCOVE T-3 TEST 1

Data Set: D:\FILES\RMCLON~1\LEMONC~1\1ST_T3.AQT
Date: 09/12/00 Time: 16:12:40

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-1

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-1	0	0

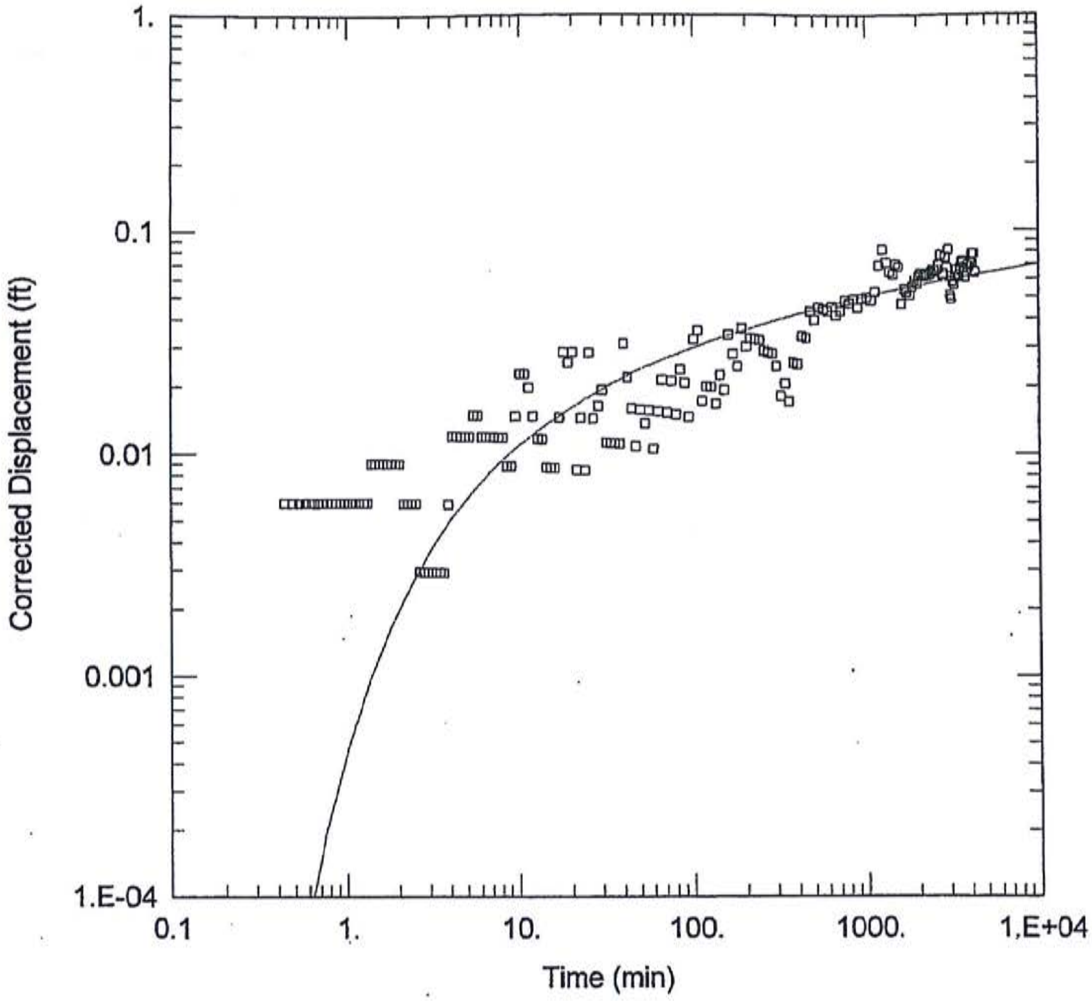
Observation Wells

Well Name	X (ft)	Y (ft)
▫ T-3	0	150

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 14.64 ft^2/min
S = 0.001792



LEMONCOVE T-4

Data Set: D:\FILES\RMCLON~1\LEMONC~1\1ST_T4.AQT
Date: 09/12/00 Time: 16:19:14

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-1

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-1	0	0

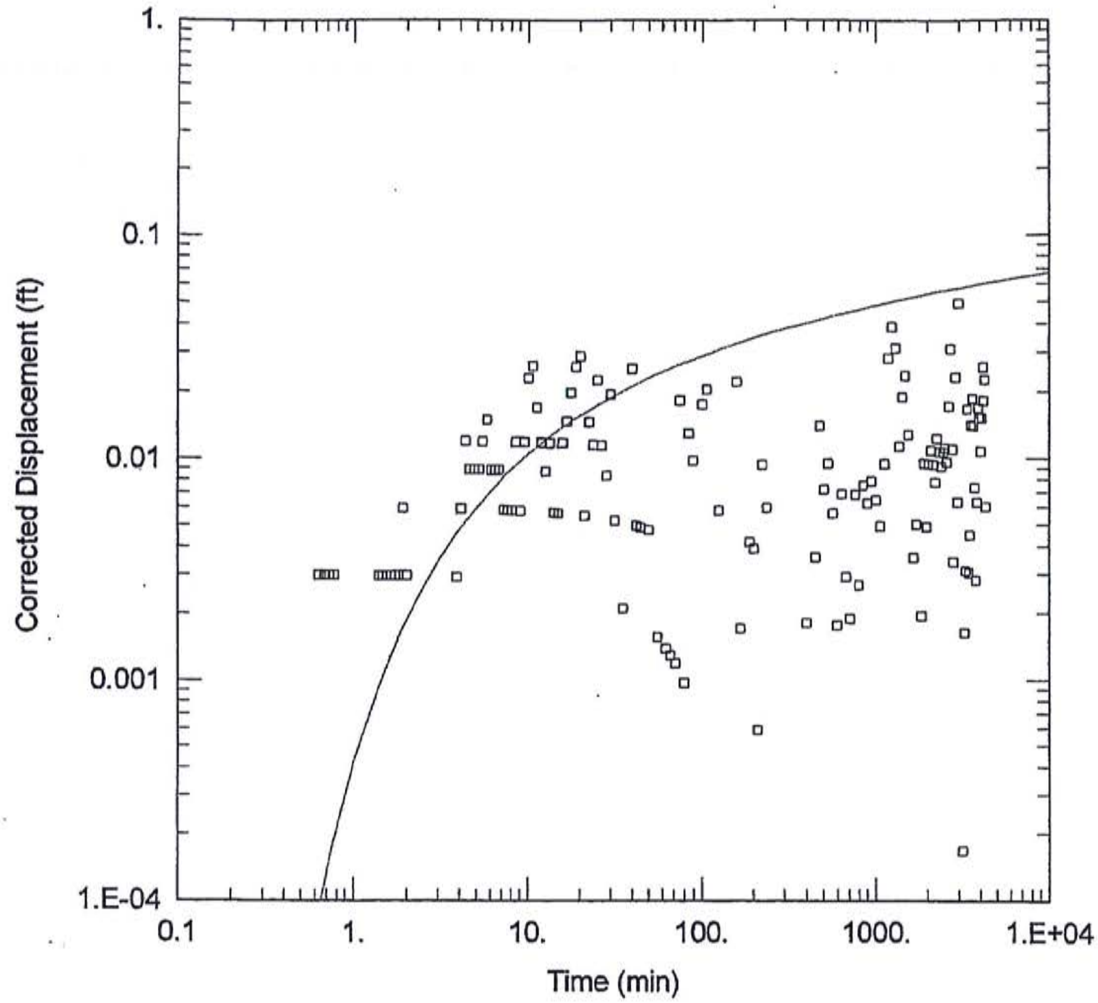
Observation Wells

Well Name	X (ft)	Y (ft)
▫ T-4	0	150

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

$T = 16.99\ ft^2/min$
$S = 0.005903$



LEMONCOVE T-5

Data Set: D:\FILES\RMCLON~1\LEMONC~1\1ST_T5.AQT
Date: 09/12/00 Time: 17:09:00

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-1

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-1	0	0

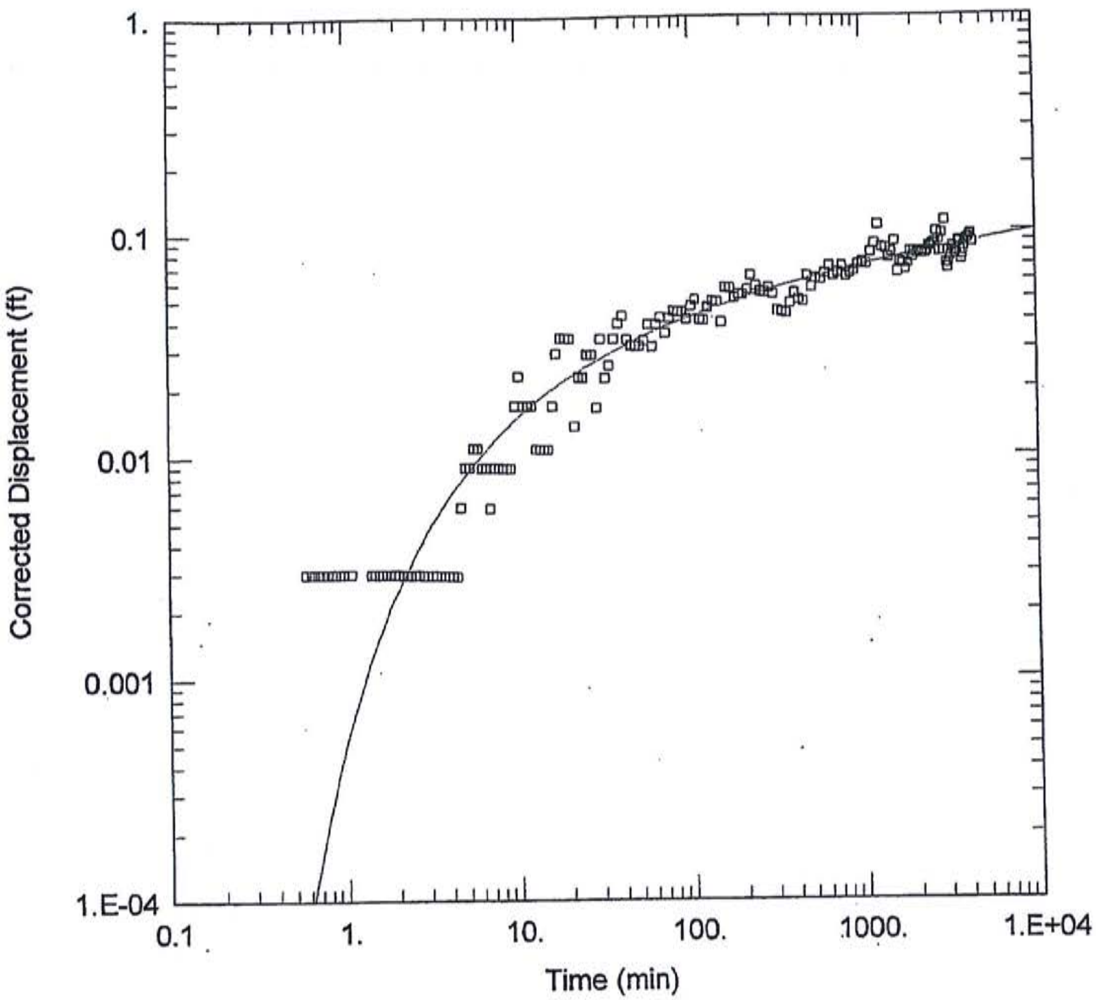
Observation Wells

Well Name	X (ft)	Y (ft)
▫ T-5	0	300

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 17.67 ft^2/min
S = 0.001559



LEMONCOVE T-6

Data Set: D:\FILES\RMCLON~1\LEMONC~1\1ST_T6.AQT
Date: 09/12/00 Time: 16:36:51

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-1

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-1	0	0

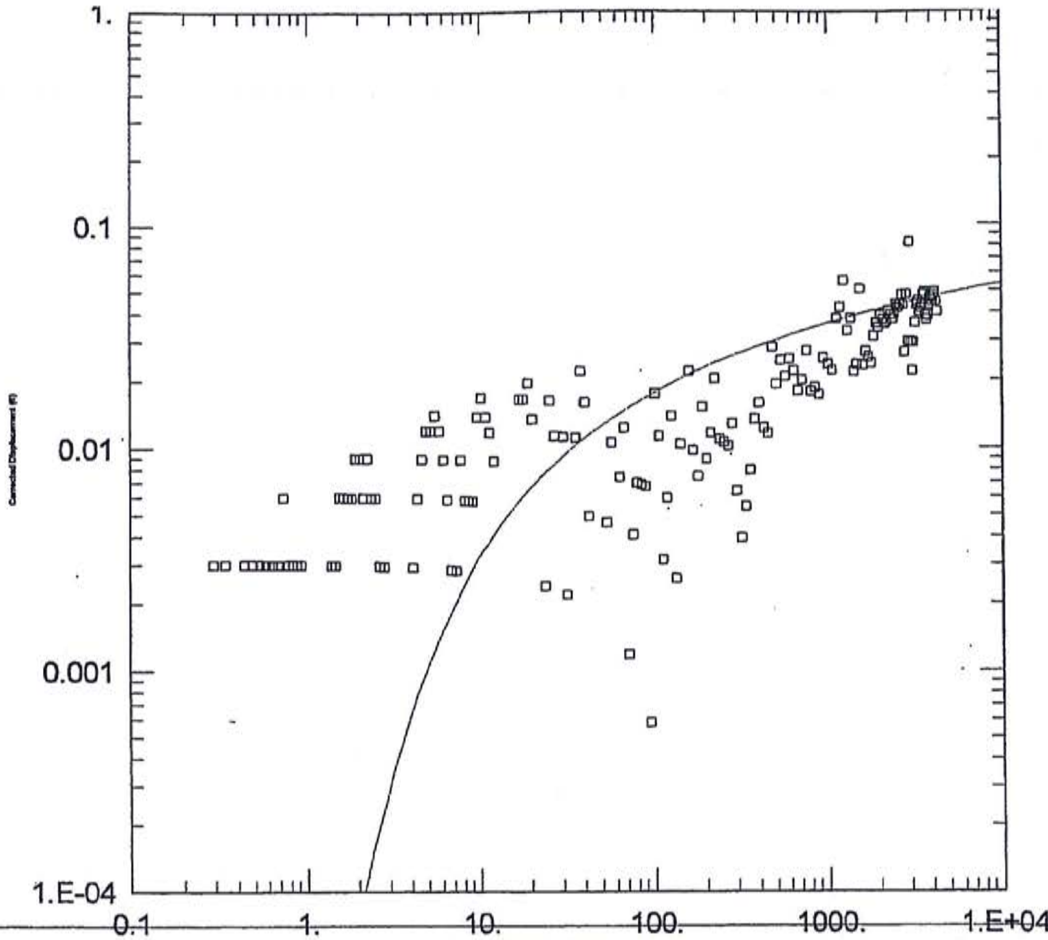
Observation Wells

Well Name	X (ft)	Y (ft)
□ T-6	0	150

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

$T = 11.83\ ft^2/min$
$S = 0.004407$



LEMONCOVE T-7

Data Set: D:\FILES\RMCLON~1\LEMONC~1\1ST_T7.AQT
Date: 09/12/00 Time: 17:12:33

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-1

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-1	0	0

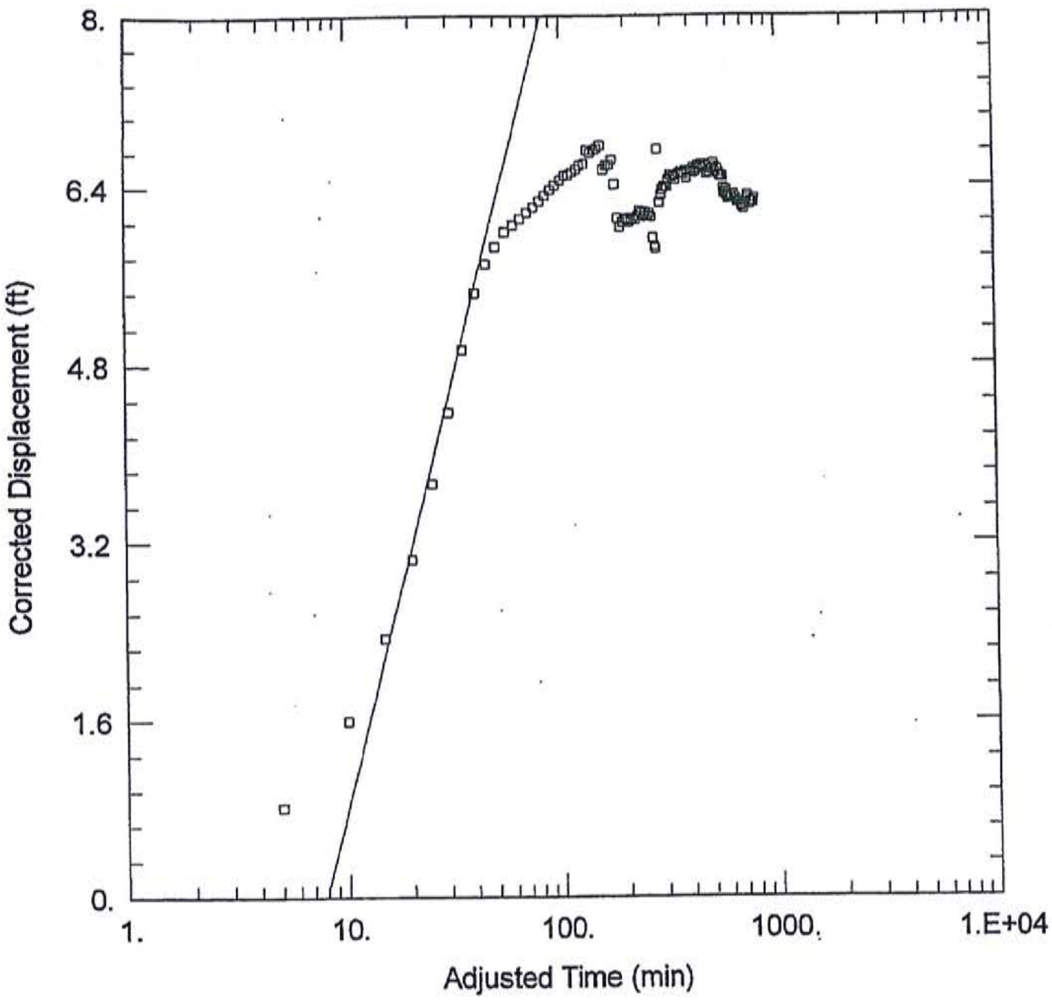
Observation Wells

Well Name	X (ft)	Y (ft)
□ T-7	0	300

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 18.73 ft^2/min
S = 0.005411



SCHMIDT WELL TEST - E-3 DATA

Data Set: D:\FILES\RMCLON~1\LEMONC~1\2ND_E3B.AQT
Date: 09/13/00 Time: 12:09:12

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-3

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-3	0	0

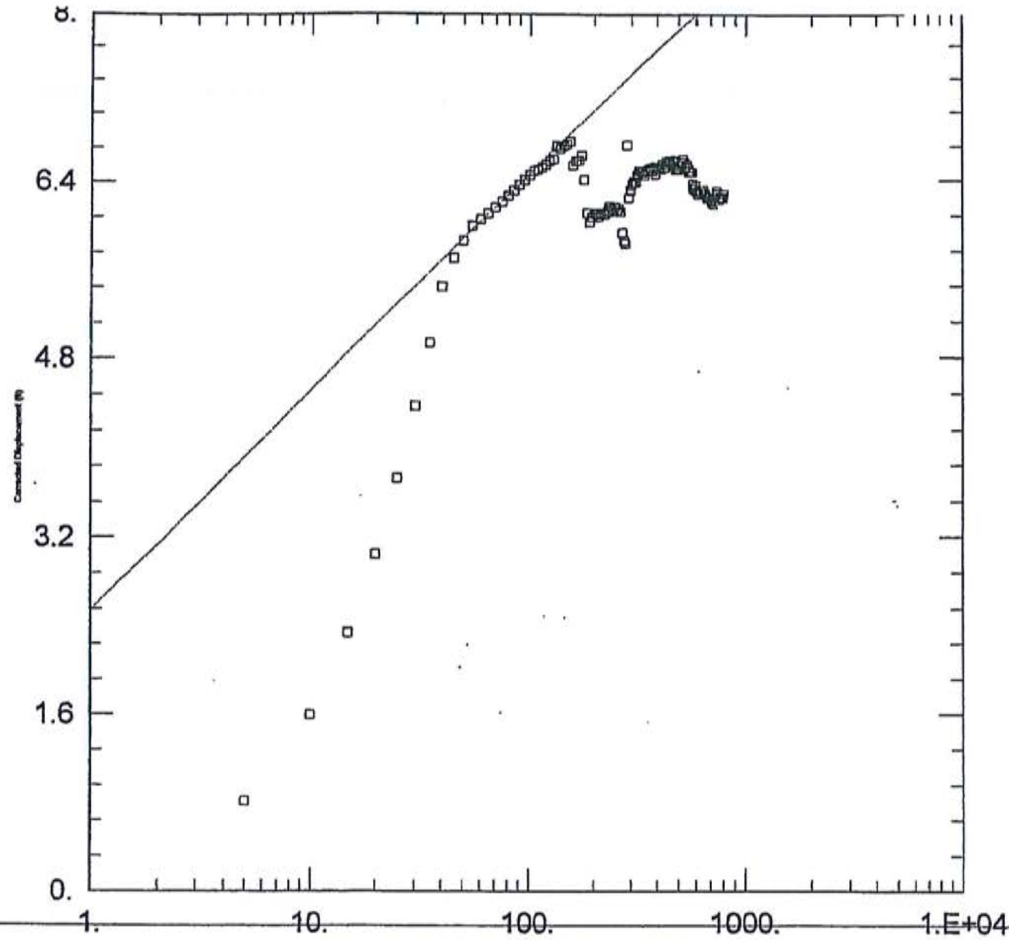
Observation Wells

Well Name	X (ft)	Y (ft)
□ E-3	0	0.5

SOLUTION

Aquifer Model: Unconfined
Solution Method: Cooper-Jacob

T = 0.04362 ft^2/min
S = 3.104



SCHMIDT WELL TEST - E-3 DATA

Data Set: D:\FILES\RMCLON~1\LEMONC~1\2ND_E3.AQT
Date: 09/13/00 Time: 12:06:31

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-3

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-3	0	0

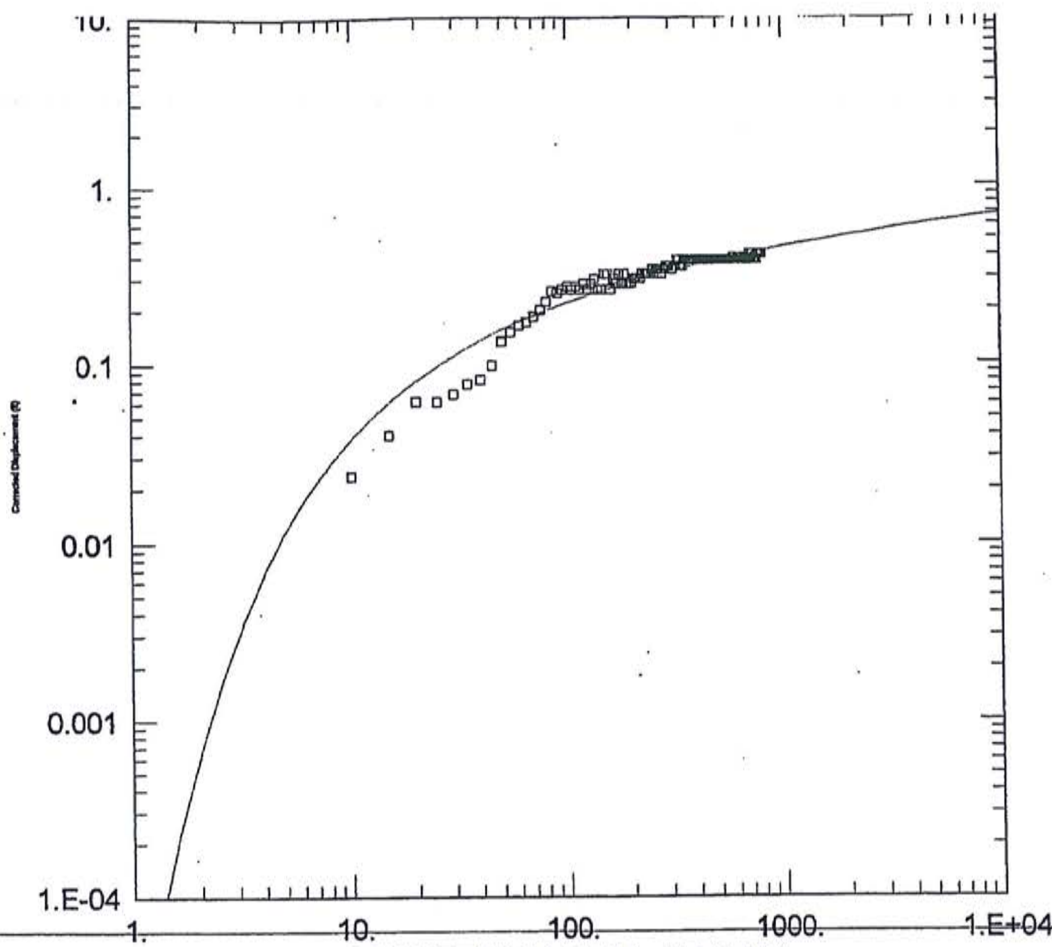
Observation Wells

Well Name	X (ft)	Y (ft)
□ E-3	0	0.5

SOLUTION

Aquifer Model: Unconfined
Solution Method: Cooper-Jacob

T = 0.1744 ft^2/min
S = 0.07952



SCHMIDT WELL TEST - E-1 DATA

Data Set: D:\FILES\RMCLON~1\LEMONC~1\2ND_E1.AQT
Date: 09/13/00 Time: 13:07:44

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-3

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-3	0	0

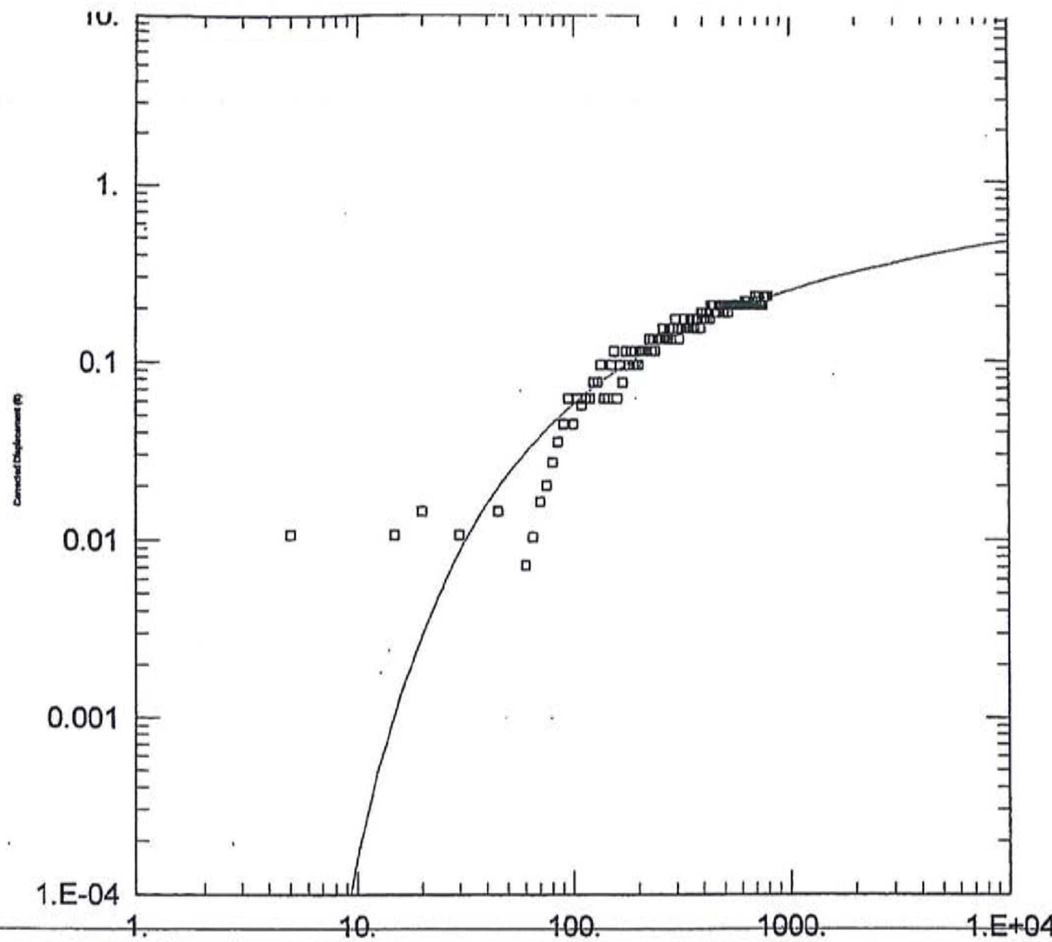
Observation Wells

Well Name	X (ft)	Y (ft)
▫ E-1	0	58.6

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

$T = 1.46\ ft^2/min$
$S = 0.01204$



SCHMIDT WELL TEST - T-4 DATA

Data Set: D:\FILES\RMCLON~1\LEMONC~1\2ND_T4.AQT
Date: 09/13/00 Time: 13:00:58

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-3

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-3	0	0

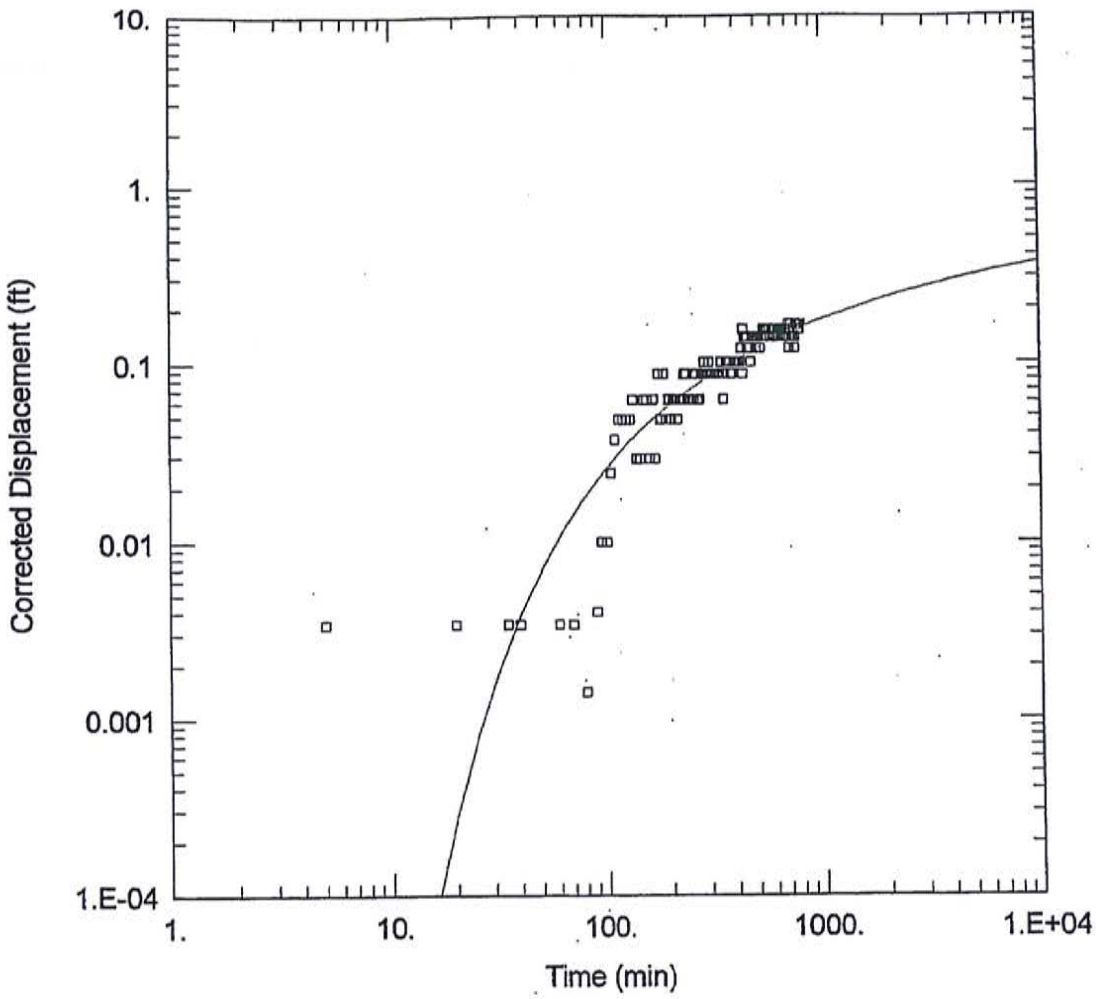
Observation Wells

Well Name	X (ft)	Y (ft)
□ T-4	0	87.7

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

$T = 1.535\ ft^2/min$
$S = 0.03773$



SCHMIDT WELL TEST - T-3 DATA

Data Set: D:\FILES\RMCLON~1\LEMONC~1\2ND_T3.AQT
Date: 09/13/00 Time: 12:52:47

PROJECT INFORMATION

Company: EMKO Environmental, Inc.
Client: RMC Pacific Materials
Test Location: Lemoncove, CA
Test Well: E-3

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
E-3	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ T-3	0	153.8

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

$T = 1.745$ ft^2/min
$S = 0.02418$

Part 2: August 25, 2014 *Addendum to Peer Review Memorandum* from Tully & Young to Tulare County RMA, and attachments

Tully & Young
Comprehensive Water Planning

Tully & Young, Inc.
3600 American River Drive, Suite 260
Sacramento, CA 95864

MEMORANDUM

To: Mike Spata, Associate Director
Tulare County Resource Management Agency

From: Greg Young, P.E.

Date: August 25, 2014

Subject: Addendum to August 25, 2013 Peer Review of *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*

The purpose of this memorandum is to recognize the receipt of additional materials submitted by CEMEX to the County on Friday August 22, 2014 and Monday August 25, 2014.

Background

Tully & Young, Inc. has evaluated the *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*, prepared by EMKO dated February 26, 2014 ("Report"), and provided a peer review memorandum to Tulare County ("County") during the week of August 18, 2014 documenting the findings and conclusions ("Peer Review Memo"). Upon review and acceptance by the County, the Peer Review Memo has been finalized as of today, August 25, 2014.

Recent Information from CEMEX

On Friday afternoon, August 22, 2014, additional materials were sent to the County by EMKO, including a memorandum with the subject Groundwater Elevation Data, Hydrographs, and contour Maps, CEMEX Stillwell Mine, and the associated elevation data accompanied by six groundwater contour maps (see **Attachment A**).

On Monday morning, August 25, 2014, EMKO also sent "*a memorandum discussing the water quality data from the CEMEX Stillwell mine, a summary of the procedures used to purge and sample the wells, and photographs of each well head.*" This data is included in **Attachment B**.

As this information has been submitted following completion of the Peer Review Memo, this recent information will need to be assessed separately. A more complete review will be undertaken and provided separately to the County. Any refinements to the Peer Review Memo as a result of this review will be identified.

Preliminary Observations of Recent Information

As noted above, a thorough review of the recently provided information will be undertaken. However, a very cursory read of the water contour memorandum and review of the associated figures was undertaken late on Friday August 22, 2014. Based on that cursory review, a few preliminary observations are offered.

1. The August 22 memorandum regarding groundwater contours states: "*Thus, there does not appear to be any correlation between discharge rates to the recharge trench, groundwater elevations, and groundwater flow directions.*" (See **Attachment A**). This appears to contradict the original hydrogeologic analysis completed to support the 2002 EIR upon which the permit condition dictating the "V" ditch was derived as part of the quarry approval. As stated in the *Hydrologic Data Evaluation Report*, June 10, 2002 (included as Attachment 7 to the Peer Review Memo, referred to here as "2002 Report"), "*Based on the data shown in Figure 5, use of the shallow trench will prevent a drop in water levels within the private wells that might otherwise be caused during the gravel mining operations.*" (2002 Report, p. 15). This statement and related analysis and conclusions of the 2002 report seem to indicate that there is a correlation that was demonstrable at the time.

2. There does not appear to be an assessment as to whether groundwater conditions underlying the subject properties were exacerbated by the lack of water in the "V" ditch since September 2013. The recent information simply states that water levels were low in March of 2012 when water was purported to be discharged to the "V" ditch, and in March of 2014, when no water was being discharged.

3. The memorandum regarding groundwater contours and water levels does not make an effort to provide further directed substantiation to the analysis and conclusions reached in the *Hydrogeologic Evaluation of Current Groundwater Conditions at the CEMEX Stillwell Quarry*, prepared by EMKO dated February 26, 2014. Rather it simply makes a conclusion that there are no correlations based on six individual groundwater contour maps.

In conclusion, as indicated above, Tully & Young will provide further analysis of the data recently submitted by CEMEX.

Attachment A

EMKO Environmental, Inc.
551 Lakecrest Dr.
El Dorado Hills, CA 95762-3772
(916)939-0133
akopania@sbcglobal.net

MEMORANDUM

August 22, 2014

To: Michael Spata, Tulare County RMA
Greg Young, Tully and Young

Cc: Aaron Bock, Tulare County RMA
Charles Przybylski, Tulare County RMA
Gordon Brown, CEMEX
Ronald Wilson, CEMEX
Pete LoCastro, CEMEX
Pat Mitchell, Mitchell Chadwick

From: Andy Kopania

Subject: Groundwater Elevation Data, Hydrographs, and Contour Maps
CEMEX Stillwell Mine

This memorandum provides a discussion of the groundwater elevation data, hydrographs, and contour maps from the CEMEX Stillwell Mine. Transmitted with this memorandum are an Excel Spreadsheet entitled "Stillwell Water Level Data" and six PDF files containing groundwater contour maps. The "Stillwell Water Level Data" file contains the following information:

- Table 1 – Available water level data from the wells that are monitored, including depth to water (DTW), surveyed top-of-casing elevation, and groundwater surface elevation (GWSE). For dates and wells where no information is reported, measurements were not made, typically due to lack of access to a specific well location.
- Table 2 – A summary of the dates for which groundwater contour maps were prepared, including conditions that were occurring at the mine and recharge trench, recent groundwater elevation trends, and the amount of water that was pumped to the recharge trench the previous month (see footnote 1, below).
- A hydrograph showing the GWSE for all wells monitored.
- A hydrograph showing the GWSE for the CEMEX and private wells along the recharge trench.
- A hydrograph showing the GWSE for the wells that are peripheral to the mine and recharge trench area.

- Four hydrographs that compare the GWSE in each of the CEMEX monitoring wells with the nearest private well.

Groundwater contour maps were prepared for six dates, as shown in Table 2, which is also presented below.

TABLE 2
Groundwater Contour Map Dates
and Site Conditions

Date	Groundwater Level and Trend	Dewatering Condition	Dewatering Rate (prior month, MM Gal.)
7/18/06	Near highest levels recorded, stable trend	Active dewatering and discharge to trench	15.73
3/1/08	Near highest levels recorded, stable trend	Active dewatering and discharge to trench	8.63
5/1/11	At highest levels recorded, stable trend	Active dewatering and discharge to trench	12.15
4/1/12	Near lowest levels recorded, declining trend	Active dewatering and discharge to trench	21.39
1/1/13	Near highest levels recorded, increasing trend	Active dewatering and discharge to trench	37.75
4/1/14	At lowest levels recorded, declining trend	No dewatering or discharge to trench	0.00

The dates for the contour maps were selected to provide a representation of conditions during different mining, climatic, and recharge conditions. Specific dates were chosen to minimize outlier data (e.g. that may be a result of recent pumping of a private well) and to be representative of the overall data trend for the time period shown. The attached Figures 1 through 6 present the contour maps.

Data from for the wells that are peripheral to the mine and recharge trench area are not included in the groundwater contours. Based on their location, field observations, and aerial photographs (see base map for Figures 1-6), the Weller, Serrins, and Aksarban wells are completed within bedrock and are, thus, not representative of conditions in the shallow alluvial material at and adjacent to the Stillwell property. The Wolford well is located west of the Kaweah River.

The Hammond well is located south of the Stillwell property in an area of alluvium between two large bedrock hills. The water level in the Hammond well is consistently higher than the CEMEX monitoring wells and adjacent neighbors' wells, typically by at least 20 feet. It is uncertain if there is a groundwater divide, shallow bedrock barrier, or other hydrogeologic feature between the Hammond well and the Stillwell property. The data indicate that there is not a direct relationship between groundwater levels at the Hammond well and at the Stillwell property.

The groundwater contour maps (attached Figures 1-6) demonstrate that the groundwater gradient is oriented from the northeast toward the southwest. This gradient direction is consistent with previous interpretations of recharge occurring primarily due to runoff from the bedrock hills to the east and northeast and leakage from the saddle dam to the northeast when water levels in Lake Kaweah are high enough to saturate that area of the lake bed.

At certain times, the gradient is oriented toward the west in part of the area monitored. This is especially true when water levels are very low, such as in April 2012 (Figure 4) and April 2014 (Figure 6). In March 2012[1], the rate of water discharge to the recharge trench was very high (see Table 2 and additional documentation provided with my August 12, 2014 memorandum), and had been occurring at a high rate for at least the prior nine months. In March 2014, however, and the prior six months, there had been no discharge to the recharge trench. Thus, there does not appear to be any correlation between discharge rates to the recharge trench, groundwater elevations, and groundwater flow directions.

[1] Most water level measurements have been collected on the first of the month (e.g. April 1, 2012). Therefore, it is appropriate to consider the water volumes from the prior month (e.g. March 2012) when comparing discharge to the recharge trench with the groundwater contours.

Table 1
Groundwater Elevation Data

Location	Wolford		Weller		Stillwell		Morton		Cairnes		Aksarban		Serrins		Mills		Hammond		MW 1		MW 2		MW 3		MW 4	
GSE (ft msl)	477.0		517.9		484.3		488.5		493.8		505.8		575.6		496.1		516.2		485.2		489.9		489.7		493.0	
	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)	DTW (ft bgs)	GWSE (ft msl)
1/24/06	12.76	464.24	6.11	509.79	4.59	479.71	7.61	480.89	7.29	486.51	16.79	489.01	76.77	498.83	14.91	481.19	10.42	505.78	6.16	479.04	10.11	479.79	10.19	479.51	9.23	483.77
3/2/06	17.96	459.04	9.31	508.59	13.09	471.30	8.41	480.09	8.69	485.11	17.96	487.84	74.32	501.28	13.15	482.95			6.61	478.59	10.11	479.79	9.51	480.19	9.29	483.71
4/5/06	12.69	464.31					7.43	481.07	5.33	488.47	19.00	486.80	76.01	499.59	13.53	482.57	9.39	506.81	4.59	480.61	8.74	481.16	7.76	481.94	7.37	485.63
4/25/06	11.97	465.03	2.39	515.51	3.57	480.73	5.91	482.59	7.00	486.80	16.44	489.36	71.91	503.69	13.71	482.39	8.99	507.21	4.25	480.95	9.21	480.69	8.29	481.41	6.70	486.30
5/22/06	14.00	463.00	2.20	515.70	4.39	479.91	6.96	481.54	7.69	486.11	17.45	488.35	61.94	513.66	14.27	481.83			6.15	479.05	9.21	480.69	6.63	483.07	8.51	484.49
6/20/06	12.29	464.71	3.46	514.44	5.00	479.30	14.84	473.66	6.12	487.68	17.61	488.19	71.93	503.67	9.67	486.43			6.64	478.56	9.51	480.39	2.51	487.19	5.61	487.39
7/18/06	21.26	455.74	5.77	512.13	5.03	479.27	7.15	481.35	6.58	487.22	17.59	488.21	78.09	497.51	15.21	480.89			6.87	478.33	9.66	480.24	3.46	486.24	6.19	486.81
8/1/06	7.91	469.09	6.97	510.93			6.61	481.89	6.31	487.49	17.74	488.06	74.57	501.03	15.31	480.79	11.91	504.29	6.86	478.34	9.58	480.32	3.85	485.85	6.48	486.52
9/19/06	13.62	463.38					6.22	482.28	6.32	487.48	18.11	487.69	74.62	500.98	13.97	482.13	12.17	504.03	6.62	478.58	9.69	480.21	3.31	486.39	6.31	486.69
10/1/06	22.69	454.31					6.35	482.15	6.23	487.57	17.76	488.04	74.11	501.49	14.96	481.14	11.95	504.25	6.70	478.50	6.44	483.46	3.00	486.70	6.00	487.00
11/1/06	9.36	467.64	5.12	512.78	16.45	467.85	5.45	483.05	6.30	487.50	17.71	488.09	74.46	501.14	15.19	480.91	11.10	505.10	7.06	478.14	9.45	480.45	3.39	486.31	6.10	486.90
12/1/06	15.42	461.58	9.62	508.28	16.94	467.36	6.11	482.39	6.31	487.49	18.43	487.37	74.33	501.27	14.97	481.13	11.15	505.05	7.13	478.07	9.36	480.54	4.16	485.54	6.18	486.82
1/1/07	14.83	462.17	10.13	507.77	5.18	479.12	6.04	482.46	6.50	487.30	17.78	488.02	74.17	501.43	15.00	481.10			7.00	478.20	9.72	480.18	4.03	485.67	4.47	488.53
2/1/07	10.36	466.64	5.33	512.57	5.10	479.20	6.10	482.40	6.80	487.00	17.94	487.86	74.74	500.86	15.34	480.76	11.27	504.93	7.20	478.00	9.64	480.26	4.32	485.38	6.72	486.28
3/1/07	10.90	466.10	5.47	512.43	15.55	468.75	6.41	482.09	7.27	486.53	18.40	487.40	74.88	500.72	17.43	478.67	11.65	504.55	7.20	478.00	10.13	479.77	4.67	485.03	7.07	485.93
4/1/07	10.96	466.04	5.39	512.51	15.45	468.85	6.40	482.10	7.42	486.38	18.53	487.27	74.20	501.40	15.39	480.71	11.60	504.60	7.26	477.94	10.04	479.86	4.47	485.23	7.28	485.72
5/1/07	11.34	465.66	5.38	512.52	14.73	469.57	5.92	482.58	6.60	487.20	18.20	487.60	77.54	498.06	15.75	480.35	12.32	503.88	7.38	477.82	10.13	479.77	3.67	486.03	6.02	486.98
6/1/07	12.13	464.87	11.29	506.61	14.82	469.48	5.40	483.10	6.37	487.43	17.19	488.61	77.82	497.78	15.37	480.73	11.27	504.93	6.93	478.27	9.60	480.30	3.51	486.19	6.40	486.60
7/1/07	12.06	464.94	5.22	512.68	21.40	462.90	6.60	481.90	9.80	484.00	17.71	488.09	73.91	501.69	15.31	480.79	13.28	502.92	7.11	478.09	9.06	480.84	3.44	486.26	5.71	487.29
8/1/07	11.84	465.16	10.74	507.16	20.25	464.05	5.60	482.90	6.69	487.11	17.70	488.10	72.62	502.98	15.46	480.64	12.90	503.30	6.97	478.23	9.86	480.04	3.86	485.84	6.74	486.26
9/1/07	13.57	463.43	5.10	512.80	20.45	463.85	5.87	482.63	6.94	486.86	17.72	488.08	79.75	495.85	16.66	479.44	19.50	496.70	6.88	478.32	9.84	480.06	3.90	485.80	6.61	486.39
10/1/07	13.78	463.22	6.05	511.85	14.70	469.60	5.85	482.65	6.90	486.90	17.59	488.21	78.21	497.39	15.00	481.10	12.60	503.60	6.52	478.68	9.69	480.21	6.87	482.83	6.76	486.24
11/1/07	14.00	463.00	4.62	513.28	15.18	469.12	5.93	482.57	6.80	487.00	17.70	488.10	72.64	502.96	14.50	481.60			6.48	478.72	9.33	480.57	3.65	486.05	6.65	486.35
12/1/07	14.00	463.00	4.82	513.08	14.68	469.62	5.80	482.70	6.95	486.85	17.63	488.17	80.98	494.64	14.75	481.35	11.20	505.00	6.63	478.57	9.51	480.39	3.79	485.91	6.79	486.21
1/1/08	13.72	463.28	5.06	512.84	15.05	469.25	5.87	482.63	7.11	486.69	17.92	487.88	73.30	502.30	14.81	481.29	12.09	504.11	6.75	478.45	9.43	480.47	4.20	485.50	7.08	485.92
2/1/08	14.34	462.66	13.38	504.52	4.87	479.43	6.80	481.70	7.09	486.71	18.05	487.75	75.33	500.27	14.82	481.28	11.74	504.48	6.34	478.86	9.46	480.44	4.50	485.20	7.11	485.89
3/1/08	21.10	455.90	13.52	504.38	5.17	479.13	5.96	482.54	7.56	486.24	18.37	487.43	75.40	500.20	14.80	481.30	14.88	501.32	6.94	478.26	10.40	479.50	5.00	484.70	7.82	485.18
4/1/08	15.00	462.00	13.55	504.35	5.18	479.12	8.92	479.58	6.60	487.20	18.20	487.60	74.43	501.17	15.22	480.88	12.46	503.74	7.12	478.08	9.91	479.99	3.69	486.01	5.97	487.03
5/1/08	14.97	462.03	14.71	503.19	5.21	479.09	5.26	483.24	6.58	487.22	17.72	488.08	84.03	491.57	14.98	481.12			7.24	477.96	9.98	479.92	3.71	485.99	6.01	486.99
6/1/08	13.00	464.00	14.02	503.88	5.25	479.05	5.14	483.36	6.90	486.90	17.60	488.20	82.13	493.47	15.33	480.77	17.22	498.98	7.10	478.10	9.75	480.15	3.75	485.95	6.60	486.40
7/1/08	11.94	465.06	14.44	503.46	5.20	479.10	6.11	482.39	7.13	486.67	17.56	488.24	75.44	500.16	15.60	480.50	13.79	502.41	7.43	477.77	10.13	479.77	3.90	485.80	6.79	486.21
8/1/08	14.29	462.71	14.78	503.12	5.10	479.20	7.00	481.50	7.39	486.41	17.72	488.08	75.68	499.92	15.87	480.23	14.25	501.95	8.00	477.20	10.63	479.27	4.22	485.48	7.16	485.84
9/1/08	14.83	462.17	15.05	502.85	9.09	475.21	8.13	480.37	6.10	487.70	17.64	488.16	86.15	489.45	16.34	479.76	13.55	502.65	7.94	477.26	11.10	478.80	4.43	485.27	5.05	487.95
10/1/08	14.81	462.19	15.27	502.63	6.11	478.19	6.38	482.12	5.96	487.84	17.41	488.39	75.02	500.58	17.30	478.80	14.32	501.88	8.13	477.07	10.78	479.12	3.66	486.04	6.72	486.28
11/1/08	15.37	461.63	15.72	502.18	5.86	478.44	5.90	482.60	5.20	488.60	17.42	488.38	74.71	500.89	20.40	475.70	13.12	503.08	7.85	477.35	10.40	479.50	3.32	486.38	6.38	486.62
12/1/08	14.61	462.39	16.00	501.90	5.90	478.40	6.19	482.31	6.64	487.16	17.80	488.00	74.33	501.27	16.14	479.96	13.38	502.82	6.92	478.28	10.44	479.46	3.36	486.34	6.42	486.58
1/1/09	15.75	461.25	36.91	480.99	6.23	478.07	6.42	482.08	7.07	486.73	18.32	487.48			12.65	483.45	13.15	503.05	8.07	477.13	10.73	479.17	3.95	485.75	6.80	486.20
2/1/09	14.55	462.45	15.67	502.23	5.63	478.67	6.55	481.95	7.40	486.40	18.79	487.01			18.22	477.88	13.28	502.92	8.00	477.20	10.91	478.99	4.12	485.58	7.00	486.00
3/1/09	14.65	462.35	15.88	502.02	6.42	477.88	6.92	481.58	7.84	485.96	19.50	486.30			16.66	479.44	10.88	505.32	8.25	476.95	11.10	478.80	4.60	485.10	7.76	485.24
4/1/09	21.97	455.03	16.05	501.85	6.55	477.75	5.79	482.71	7.16	486.64	18.67	487.13			16.50	479.60	13.90	502.30	8.38	476.82	10.61	479.29	3.33	486.37	6.51	486.49
5/1/09	14.51	462.49	16.05	501.85			10.05	478.45	7.29	486.51	18.70	487.10			16.40	479.70	14.10	502.10	8.00	477.20	10.65	479.25	3.85	485.85	6.45	486.55
6/1/09	12.01	464.99	16.17	501.73			5.82	482.68	6.39	487.41	18.33	487.47			13.61	482.49	20.83	495.37	6.34	478.86	11.18	478.72	2.80	486.90	5.55	487.45
7/1/09	11.95	465.05	17.10	500.80			5.90	482.60	6.67	487.13	18.33	487.47			19.15	476.95	17.15	499.05	6.34	478.86	11.01	478.89	3.08	486.62	5.50	487.50
8/1/09	14.13	462.87	17.43	500.47			6.95	481.55	7.00	486.80	18.13	487.67			16.40	479.70	14.91	501.29	8.35	476.85	10.45	479.45	2.60	487.10	5.60	487.40
9/1/09	15.35	461.65	17.91	499.99			6.80	481.70	6.90	486.90	18.25	487.55			16.84	479.26	19.95	496.25	8.66	476.54	10.67	479.23	2.65	487.05	6.08	486.92
10/1/09	15.15	461.85	18.10	499.80	6.68	477.62	5.50	483.00	6.59	487.21	17.94	487.86			16.10	480.00	14.73	501.47	8.25	476.95	10.10	479.80	2.70	487.00	5.82	487.18
11/1/09	15.34	461.66	18.31	499.59	5.16	479.14	4.66	483.84	6.68	487.12	18.10	487.70			15.46	480.64	14.85	501.35	7.93	477.27	9.54	480.36	2.75	486.95	5.76	487.24
12/1/09	14.36	462.64	18.27	499.63	6.70	477.60	4.38	484.12	6.20	487.60	17.80	488.00			15.43	480.67	14.46	501.74	7.62	477.58	9.17	480.73	2.39	487.31	5.44	487.56
1/1/10	15.43	461.57	17.82	500.08	5.60	478.70	4.39	484.11	6.20	487.60	18.10	487.70			15.86	480.24	14.65	501.55	7.54	477.66	9.46	480.44	2.50	487.20	5.74	487.26
2/1/10	14.60	462.40	15.74	502.16	4.15	480.15	3.95	484.55	5.72	488.08	17.63	488.17			14.05	482.05	13.67	502.53	5.85	479.35	8.15	481.75	2.58	487.12	5.58	487.42
3/1/10	12.10	464.90	10.40	507.50	3.83	480.47	3.85	484.65	6.38	487.42	15.95	489.85			11.12	484.98			5.53	479.67	8.30	481.60	2.24	487.46	5.38	487.62
4/1/10	13.58	463.42	9.96	507.94	3.46	480.84	6.05	482.45	5.86	487.94	17.28	488.52			13.63	482.47	12.56	503.64	5.46	479.74	8.17	481.73	2.36	487.34	6.49	486.51
5/1/10	12.13	464.87	10.13	507.77	6.58	477.72	4.13	484.37	6.90	486.90	17.38	488.42			14.76	481.34	12.65	503.55	5.56	479.64	8.14	481.76	2.50	487.20	5.71	487.29
6/1/10	21.23	455.77	10.50	507.40	5.31	478.99	5.81	482.69	6.32	487.48	17.35	488.45			16.11	479.99			5.71	479.49	8.42	481.48	2.86	486.84	5.56	487.44
7/1/10	11.29	465.71	9.78	508.12	4.33	479.97	6.75	481.75	6.70	487.10	17.45	488.35			20.43	475.67			5.60	479.60	8.34	481.56	2.46	487.24	8.56	484.44
8/1/10	13.98	463.02	11.37	506.53	4.15	480.15	6.15	482.35	6.50	487.30	17.37	488.43			14.00	482.10			6.06	479.14	8.36	481.54	2.83	486.87	6.82	486.18
9/1/10	14.58	462.42	12.00	505.90	4.57	479.73	4.60	483.90	6.40	487.40	17.37	488.43			14.18	481.92	14.38	501.84	6.60	478.60	8.92	480.98	2.50	487.20	6.31	486.69
10/1/10	15.22	461.78	12.29	505.61	4.25	480.05	4.20	484.30	6.22	487.58	17.20	488.60			14.30	481.80	14.00	502.20	6.25	478.95	8.44	481.46	2.56	487.14	5.73	487.27
11/1/10	15.68	461.32	12.51	505.39	4.28	480.02	4.18	484.32	6.10	487.70	16.96	488.84			14.05	482.05	13.85	502.35	6.90	478.30	8.30	481.60	2.05	487.65	5.75	487.25
12/1/10	14.87	462.13	13.21	504.69	3.85	480.45	4.10	484.40	6.93	486.87	16.92	488.88			13.94	482.16			6.23	478.97	9.15	480.75	2.75	486.95	6.60	486.40
1/1/11	11.13	465.87	0.92	516.98	2.64	481.66	4.11	484.39	3.92	489.88	13.8	492.00			1.54	494.56	8.96	507.24	4.67	480.53	7.98	481.92	3.27	486.43	6.19	486.81
2/1/11	11.3	465.70	1.7	516.20	3.4	480.90	4.4	484.10	6.2	487.60	15.3	490.50			12.8	483.30	9.6	506.60	4.7	480.50	8.1	481.80	3.4	486.30	5.1	487.90
3/1/11	15.12	461.88	1.12	516.78	4.14	480.16	5.95	482.55	6.18	487.62	14.14	491.66			3.78	492.32			6.16	479.04	9.97	479.93	3.27	486.43	9.84	483.16
4/1/11	14.87	462.13	0.57	517.33	4.24	480.06	4.75	483.75	5.43	488.37	15.56	490.24			9.27	486.83	8.24	507.96	5.85	479.35	8.32	481.58	3.34	486.36	7.47	485.53
5/1/11	12.72	464.28	1.01	516.89	3.72	480.58	4.42	484.08	6.6	487.20	16.97	488.83			14.22	481.88			4.87	480.33	7.59	482.31	3.24	486.46	6.19	486.81
6/1/11	12.28	464.72	1.38	516.52	3.12	481.18	4.75	483.75	3.65	490.15	13.21	492.59			13.56	482.54	9.42	506.78	5.72	479.48	8.39	481.51	2.84	486.86	5.65	487.35
7/1/11	12.64	464.36	1.79	516.11	4.47	479.83	5.74	482.76	8.82	484.98	16.27	489.53			15.51	480.59			6.47	478.73	9.12	480.78	4.71	484.99	8.91	484.09
8/1/11	22.32	454.68	2.02	515.88	4.02	480.28	5.04	483.46	6.07	487.73	11.07	494.73			14.02	482.08	10.09	506.11	8.08	477.12	8.05	481.85	8.02	481.68	5.04	487.96
9/1/11	22.53	454.47	3.12	514.78	5.12	479.18	7.02	481.48	11.04	482.76	17.02	488.78			22.03	474.07	11.07	505.13	9.87	475.33	9.21	480.69	2.64	487.06	3.09	489.91
10/1/11	14.73	462.27	3.72	514.18	4.92	479.38	4.26	484.24	6.82	486.98	16.5	489.30			14.51	481.59	11.05	505.15	6.56	478.64	9.09	480.81	3.01	486.69	6.43	486.57
11/1/11	15.58	461.42	4.08	513.82	5.15	479.15	4.95	483.55	6.47	487.33	17.52	488.28			14.44	481.66			8.89	476.31	10.01	479.89	3.43	486.27	5.68	487.32
12/1/11	15.3	461.70	4.10	513.80	3.83	480.47	6.03	482.47	8.01	485.79	16.05	489.75			15	481.10	10.9	505.30	4.2	481.00	10.6	479.30	3.9	485.80	6.8	486.20
1/1/12	15.87	461.13	4.35	513.55	6.21	478.09	12.68	475.82	13.31	480.49	17.32	488.48			16.96	479.14	11.34	504.86	8.1	477.10	12.11	477.79	11.73	477.97	15.1	477.90
2/1/12	16.21	460.79	3.58	514.32	7.96	476.34	11.56	476.94	14.63	479.17	17.85	487.95			18.41	477.69	13.51	502.69	8.94	476.26	13.21	476.69	13.18	476.52	16.43	476.57
3/1/12	16.63	460.37	4.78	513.12	7.67	476.63	11.15	477.35	6.86	486.94	17.97	487.83			17.96	478.14	11.46	504.74	9.46	475.74	13.51	476.39	13.93	475.77	16.91	476.09
4/1/12	14.93	462.07	4.35	513.55	8.01	476.29	12.02	476.48	13.74	480.06	17.91	487.89			18.47	477.63	11.27	504.93	10.19	475.01	14.6	475.30	14.55	475.15	17.33	475.67
5/1/12	20.87	456.13	4.31	513.59	8.62	475.68	14.89	473.61	3.82	489.98	14.74	491.06			19.51	476.59	10.54	505.66								
6/1/12	14.61	462.39	22.33	495.57	8.94	475.36	12.08	476.42	9.75	484.05	17.66	488.14			19.34	476.76	12.77	503.43								
7/1/12	21.25	455.75		517.90	9.19	475.11			9.51	484.29	17.5	488.30					16.51	499.69								
8/1/12	21.21	455.79	7.42	510.48	8.72	475.58	10.52	477.98	8.88	484.92	17.57	488.23			19.53	476.57	13.4	502.80	10.53	474.67	12.12	477.78	5.35	484.35	8.6	484.40
9/1/12	21.3	455.70	8.2	509.70	9.0	475.30	8.0	480.50	8.3	485.50	17.5	488.30					13.2	503.00	10.5	474.70	12.6	477.30	4.1	485.60	8.2	484.80
10/1/12	16.21	460.79	8.82	509.08	8.5	475.80	7.71	480.79	7.49	486.31	17.28	488.52					16.23	499.97	10.39	474.81	12.41	477.49	4.32	485.38	7.52	485.48
11/1/12	16.1	460.90	8.91	508.99	8.11	476.19	7.21	481.29	6.8	487.00	17.2	488.60					11.71	504.49	10.01	475.19	12.25	477.65	3.81	485.89	6.91	486.09
12/1/12	14.78	462.22	8.86	509.04	8.1	476.20	7.2	481.30	6.6	487.20	17.2	488.60					11.75	504.45	10.05	475.15	12.2	477.70	3.65	486.05	6.6	486.40
1/1/13	15.7	461.30	9.01	508.89	7.81	476.49	4.96	483.54	6.21	487.59	17.21	488.59			17.2	478.90	11.64	504.56	9.52	475.68	11.1	478.80	2.91	486.79	6.15	486.85
2/1/13	15.5	461.50	13.6	504.30	7.3	477.00	5.8	482.70	6.3	487.50	17.3	488.50			17.2	478.90	14.3	501.90	9.2	476.00	11.0	478.90	3.2	486.50	6.2	486.80
3/1/13	16.81	460.19	8.87	509.03	8.01	476.29	7.76	480.74	6.91	486.89	17.58	488.22			17.01	479.09	11.67	504.53	10.01	475.19	11.93	477.97	3.32	486.38	6.35	486.65
4/1/13	17.91	459.09	9.6	508.30	10.1	474.20	6.42	482.08	6.81	486.99	17.55	488.25			19.6	476.50	13.75	502.45	11.21	473.99	13.9	476.00	5.01	484.69	8.5	484.50
5/1/13	22.5	454.50		517.90	8.11	476.19	8.01	480.49	6.82	486.98	17.51	488.29			18.5	477.60	12.51	503.69	6.31	478.89	12.66	477.24	9.41	480.29	7.01	485.99
6/1/13	13.6	463.40	11.1	506.80	13.21	471.09	8.8	479.70	7.7	486.10	17.9	487.90			19.4	476.70			11.5	473.70	14.01	475.89	6.71	482.99	9.11	483.89
7/1/13	15.7	461.30	12.6	505.30	15.4	468.90	8.4	480.10	8.5	485.30	12.5	493.30			19.4	476.70			12.4	472.80	14.5	475.40	7.1	482.60	7.9	485.10
8/1/13	16.01	460.99	11.9	506.00	12.91	471.39	9.1	479.40	7.2	486.60	15.61	490.19			13.71	482.39	14.6	501.60	10.6	474.60	13.4	476.50		489.70		
9/1/13	21.9	455.10	11.9	506.00	11.2	473.10	12.5	476.00	10.0	483.80	17.5	488.30					13.8	502.40	12.8	472.40	15.0	474.90	11.4	478.30	14.2	478.80
10/1/13	16.01	460.99	15.2	502.70	17.5	466.80	14.7	473.80	15.8	478.00	22.7	483.10			26.2	469.90	18.4	497.80	12.01	473.19	15.3	474.60	15.6	474.10	18.4	474.60
11/1/13	17.1	459.90	12.8	505.10	13.4	470.90	12.9	475.60	15.7	478.10	18.4	487.40			18.9	477.20	15.5	500.70	14.7	470.50	16.0	473.90	15.8	473.90	16.3	476.70
1/1/14	16.24	460.76	16.23	501.67	11.17	473.13	14.43	474.07	15.21	478.59	18.47	487.33			21.44	474.66	13.79	502.41								
2/1/14	16.53	460.47	13.27	504.63			14.92	473.58	15.45	478.35	18.62	487.18			22.01	474.09										
3/1/14	16.35	460.65	13.11	504.79	11.81	472.49	15.35	473.15	15.65	478.15	19.11	486.69			22.24	473.86	13.43	502.77	13.73	471.47	17.74	472.16	17.41	472.29	19.52	473.48
4/1/14	17.48	459.52	14.51	503.39	12.98	471.32	16.43	472.07	16.4	477.40	19.09	486.71			24.11	471.99	14.46	501.74	14.65	470.55	18.91	470.99	17.73	471.97	20.25	472.75
5/1/14	16.78	460.22	13.6	504.30	12.5	471.80			15.85	477.95	19.5	486.30			23.1	473.00			14.38	470.82	18.45	471.45	17.75	471.95	19.67	473.13
6/1/14	16.54	460.5	13.95	504.0	11.21	473.1	15.40	473.1	15.31	478.5	18.72	487.1			22.35	473.8			14.21	471.0	19.11	470.8	17.56	472.1	19.51	473.5

GSE = Ground surface elevation
DTW = Depth to Water
GWSE = Groundwater surface elevation
ft bgs = feet below ground surface
ft msl = feet above mean sea level

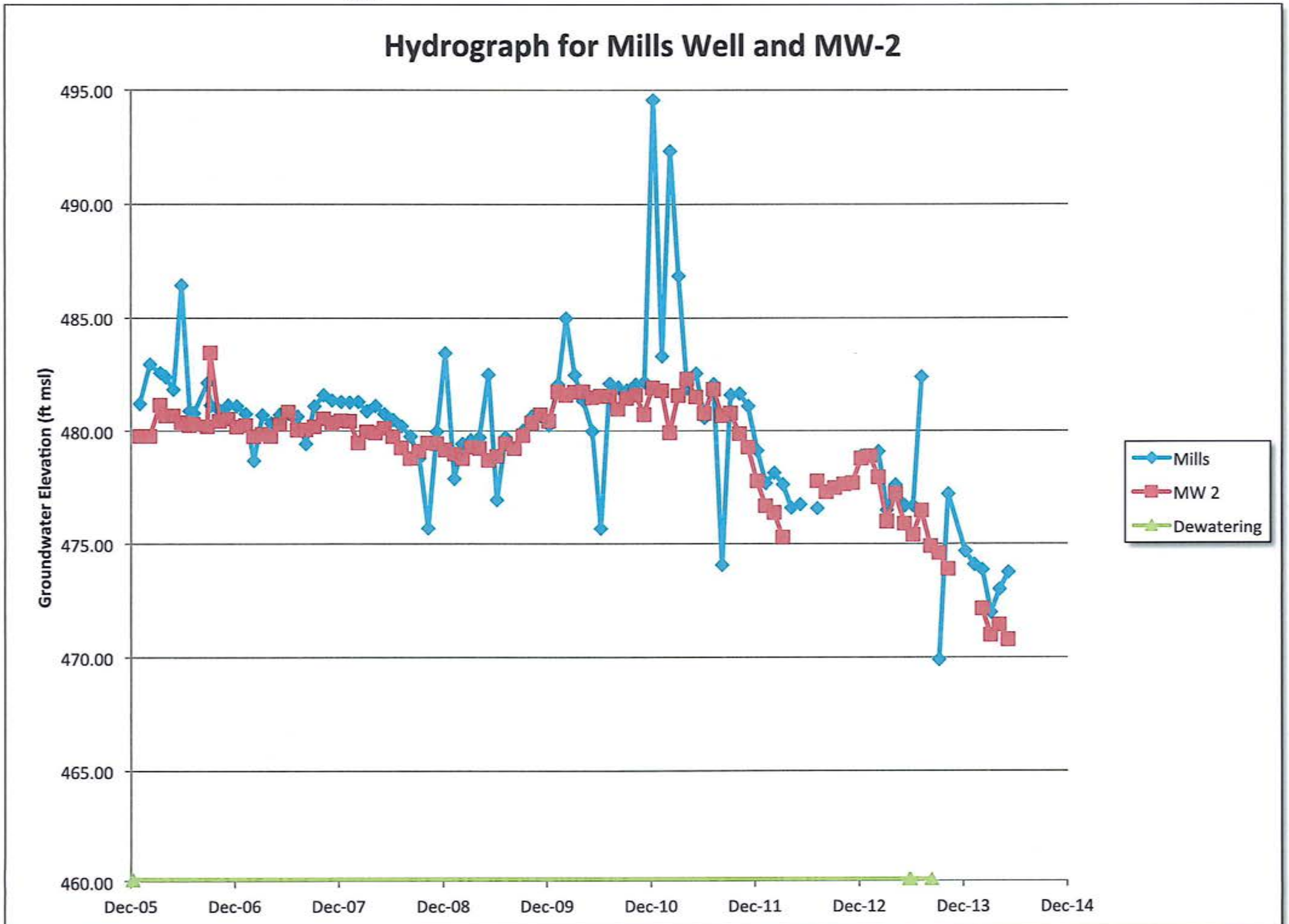
	1/1/08	6/17/13	6/18/13	6/21/13	6/4/13
Dewatering	460.1	460.1	460.1	460.1	460.1

TABLE 2
Groundwater Contour Map Dates
and Site Conditions

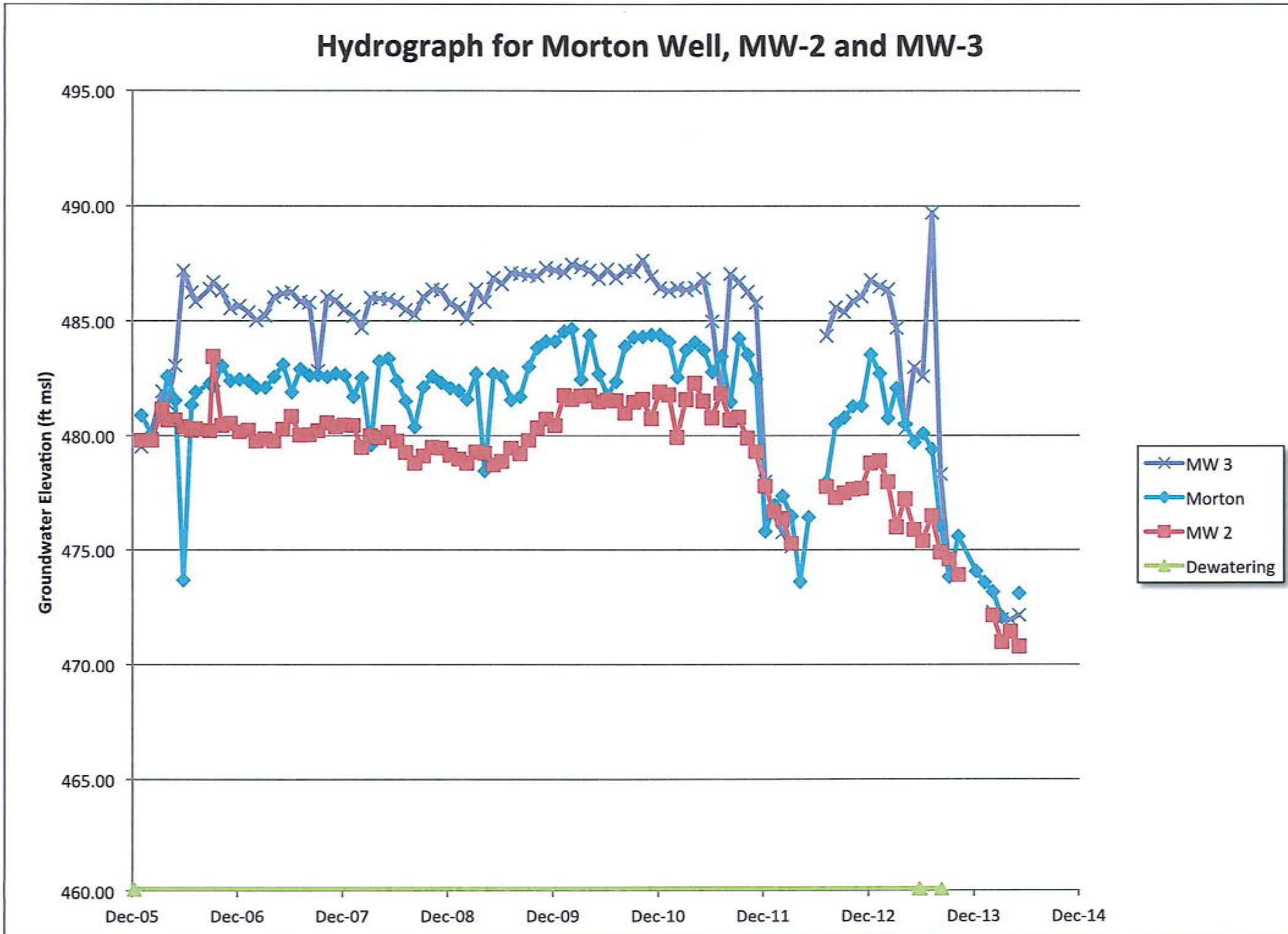
Date	Groundwater Level and Trend	Dewatering Condition	Dewatering Rate (prior month, MM Gal.)
7/18/06	Near highest levels recorded, stable trend	Active dewatering and discharge to trench	15.73
3/1/08	Near highest levels recorded, stable trend	Active dewatering and discharge to trench	8.63
5/1/11	At highest levels recorded, stable trend	Active dewatering and discharge to trench	12.15
4/1/12	Near lowest levels recorded, declining trend	Active dewatering and discharge to trench	21.39
1/1/13	Near highest levels recorded, increasing trend	Active dewatering and discharge to trench	37.75
4/1/14	At lowest levels recorded, declining trend	No dewatering or discharge to trench	0.00

Hydrograph for Stillwell Well and MW-1

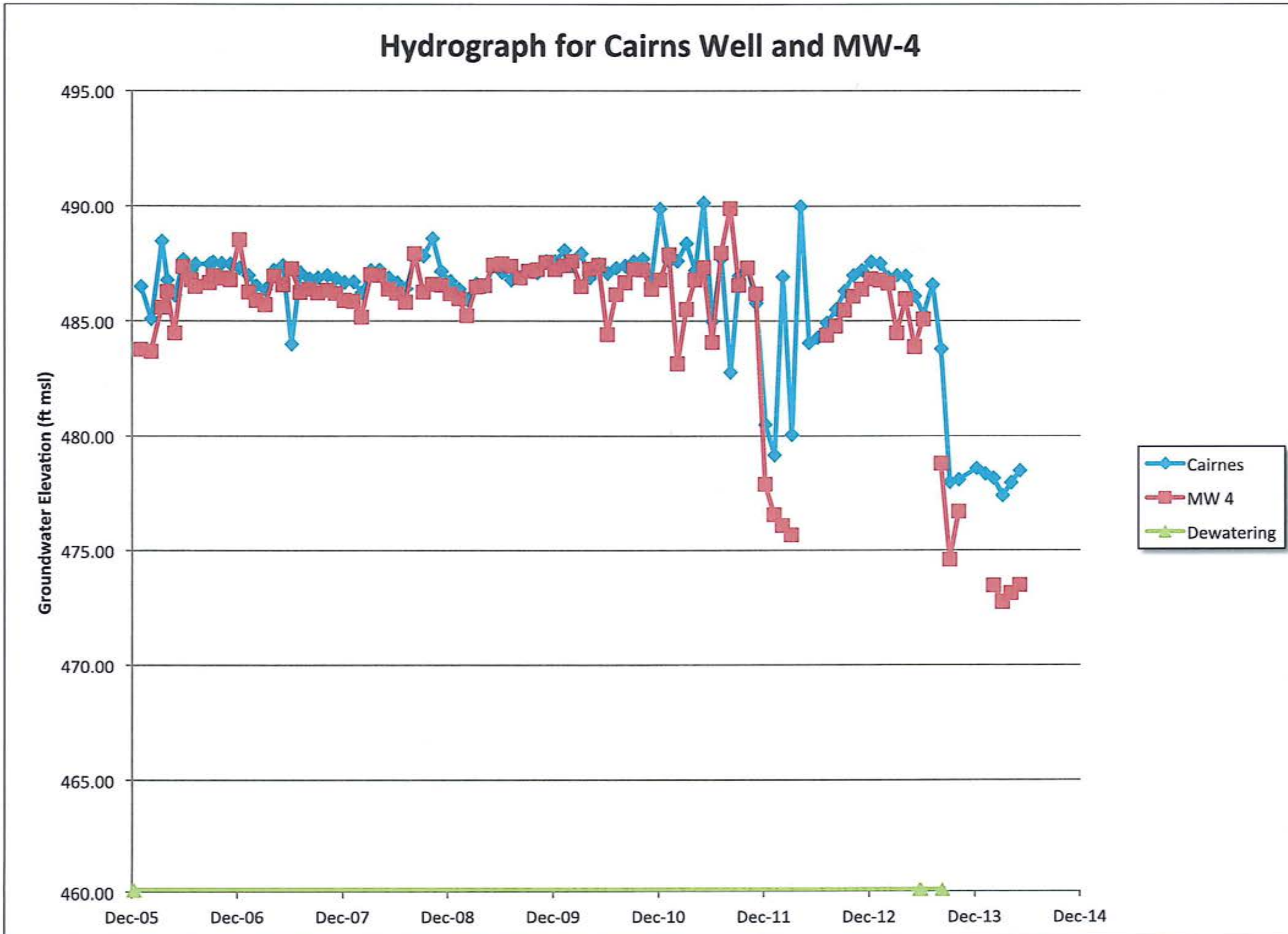
Text



Hydrograph for Mills Well and MW-2
495.00
490.00
485.00
480.00
475.00
470.00
465.00
460.00
Groundwater Elevation (ft msl)
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Mills
MW 2
Dewatering

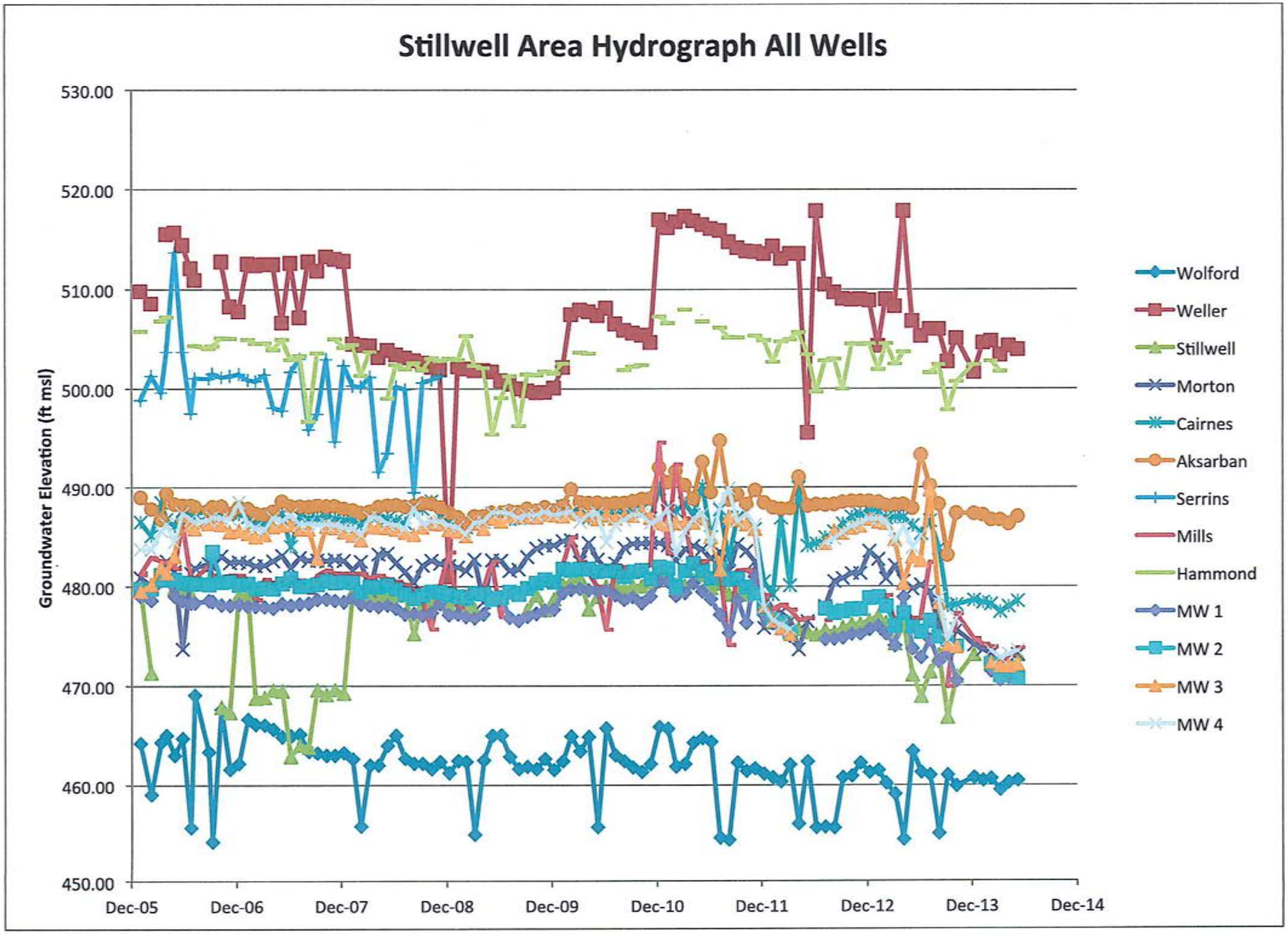


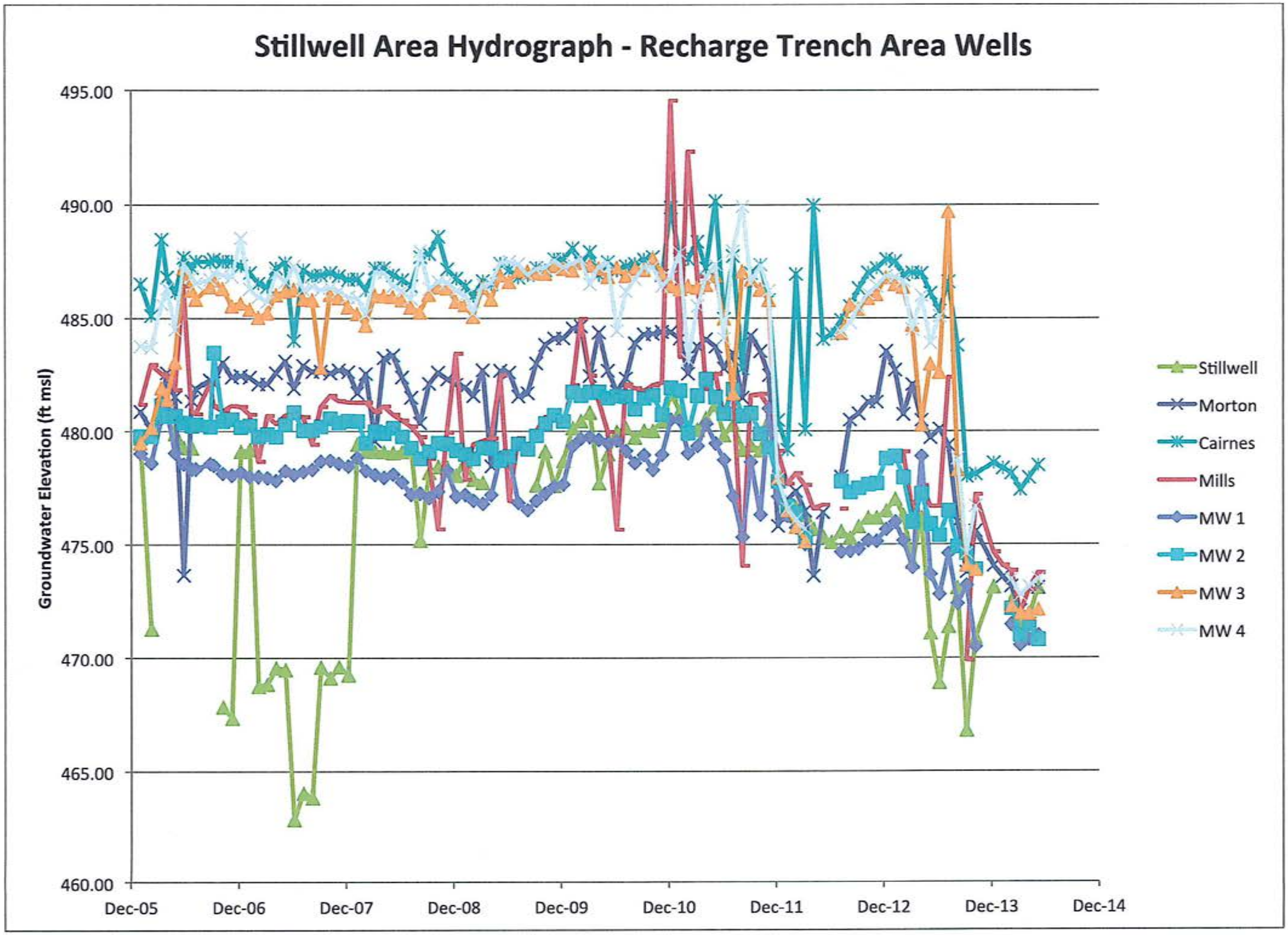
Hydrograph for Morton Well, MW-2 and MW-3
Groundwater Elevation (ft msl)
495.00
490.00
485.00
480.00
475.00
470.00
465.00
460.00
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
MW 3
Morton
MW 2
Dewatering



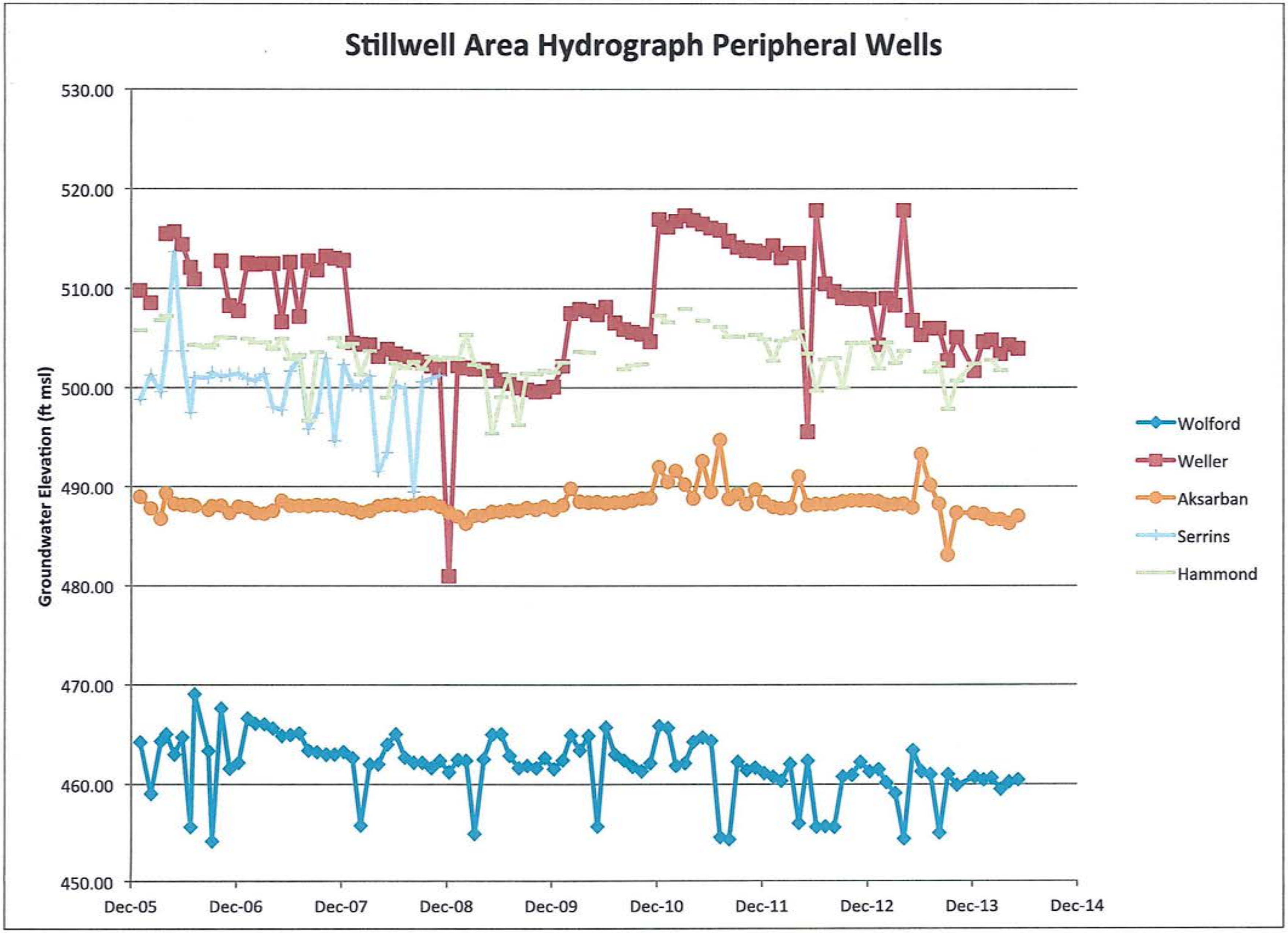
Hydrograph for Cairns Well and MW-4
Groundwater Elevation (ft msl)
495.00
490.00
485.00
480.00
475.00
470.00
465.00
460.00
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Cairnes
MW 4
Dewatering

Text


Stillwell Area Hydrograph All Wells
Groundwater Elevation (ft msl)
530.00
520.00
510.00
500.00
490.00
480.00
470.00
460.00
450.00
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Wolford
Weller
Stillwell
Morton
Cairnes
Aksarban
Serrins
Mills
Hammond
MW 1
MW 2
MW 3
MW 4



Stillwell Area Hydrograph - Recharge Trench Area Wells
Groundwater Elevation (ft msl)
495.00
490.00
485.00
480.00
475.00
470.00
465.00
460.00
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Stillwell
Morton
Cairnes
Mills
MW 1
MW 2
MW 3
MW 4


Stillwell Area Hydrograph Peripheral Wells
Groundwater Elevation (ft msl)
530.00
520.00
510.00
500.00
490.00
480.00
470.00
460.00
450.00
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Wolford
Weller
Aksarban
Serrins
Hammond

LEGEND

⊕	Well Locations
504.29	Groundwater Surface Elevation in Well
——— 480	Groundwater Contour and Elevation (contour interval = 1 foot)
	Elevations in feet above Mean Sea Level
NM	Not Measured

Groundwater Contours - July 2006
STILLWELL QUARRY
Figure 1

EMKO Environmental, Inc.

LEGEND

⊕	Well Locations
504.29	Groundwater Surface Elevation in Well
——480	Groundwater Contour and Elevation (contour interval = 1 foot)
	Elevations in feet above Mean Sea Level
NM	Not Measured

EMKO Environmental, Inc.

Groundwater Contours - March 2008
STILLWELL QUARRY
Figure 2

LEGEND

⊕	Well Locations
504.29	Groundwater Surface Elevation in Well
——480	Groundwater Contour and Elevation (contour interval = 1 foot)
	Elevations in feet above Mean Sea Level
NM	Not Measured

Groundwater Contours - May 2011
STILLWELL QUARRY
Figure 3

EMKO Environmental, Inc.

LEGEND

⊕	Well Locations
504.29	Groundwater Surface Elevation in Well
——— 480	Groundwater Contour and Elevation (contour interval = 1 foot)
	Elevations in feet above Mean Sea Level
NM	Not Measured

Groundwater Contours - April 2012
STILLWELL QUARRY
Figure 4

EMKO Environmental, Inc.

LEGEND

⊕	Well Locations
504.29	Groundwater Surface Elevation in Well
—— 480	Groundwater Contour and Elevation (contour interval = 1 foot)
	Elevations in feet above Mean Sea Level
NM	Not Measured

Groundwater Contours - January 2013
STILLWELL QUARRY
Figure 5

EMKO Environmental, Inc.

LEGEND

⊕	Well Locations
504.29	Groundwater Surface Elevation in Well
——— 480	Groundwater Contour and Elevation (contour interval = 1 foot)
	Elevations in feet above Mean Sea Level
NM	Not Measured

Groundwater Contours - April 2014
STILLWELL QUARRY
Figure 6

EMKO Environmental, Inc.

Attachment B

EMKO Environmental, Inc.
551 Lakecrest Dr.
El Dorado Hills, CA 95762-3772
(916)939-0133
akopania@sbcglobal.net

MEMORANDUM

August 25, 2014

To: Michael Spata, Tulare County RMA
Greg Young, Tully and Young

Cc: Aaron Bock, Tulare County RMA
Charles Przybylski, Tulare County RMA
Gordon Brown, CEMEX
Ronald Wilson, CEMEX
Pete LoCastro, CEMEX
Pat Mitchell, Mitchell Chadwick

From: Andy Kopania

Subject: Water Quality Data
CEMEX Stillwell Mine

This memorandum provides a brief discussion of water quality data obtained as part of monitoring conducted in relation to the CEMEX Stillwell Mine. Transmitted with this memorandum are the following:

- Excel Spreadsheet entitled "Water Quality Summary with Plots"; containing Table 1 showing the available water quality data and various water-quality analysis plots.
- Word file entitled "RMC – Water Sampling and Sounding Procedures", describing the methods used to obtain samples.
- PDF file entitled "Wellhead photos", showing the wellhead for each well sampled, except for Morton. The Morton well was not accessible on the date the photographs were taken due to a dog in the yard.
- Nine PDF files with titles beginning with "DELLAVALLE- -CEMEX QUARRY – <DATE>", providing the field records of well purging and sampling for the monitoring wells. The indicator <DATE> represents the date of the sampling event.
- Nine PDF files with titles "CEMEX 2005" through "CEMEX 2014" presenting the laboratory analytical reports summarized in the Excel Spreadsheet file referenced in the first bullet, above.

Of particular concern in the results are the nitrate levels in the Cairns, Morton, and Stillwell domestic wells. The nitrate levels routinely exceed the maximum contaminant level (MCL) for drinking water of 45 milligrams per liter (mg/L).

Due to an apparent miscommunication in the field, the mine pit (referred to as the "Pump Basin" on Table 1 and the lab sheets) and v-ditch were only sampled in 2006. Nitrate was not detected in the sample from the mine pit and was present at less than one-tenth of the MCL in the v-ditch sample. Comparison of the 2006 data from the v-ditch and the three domestic wells also indicates additional water quality differences, such as much higher total dissolved solids (TDS) in the domestic wells and differences in the proportion of various anions and cations (see Table 1 and the water quality plots in the Excel spreadsheet file).

Based on the groundwater flow direction (see August 22, 2014 memorandum *Groundwater Elevation Data, Hydrographs, and Contour Maps*), the elevated nitrate and TDS in the domestic wells is most likely a result of local septic systems clustered near the domestic wells and/or the orchards upgradient to the northeast of the domestic wells. The elevated nitrate and TDS are not sourced from the mine site or the v-ditch.

It is anticipated that all wells, the mine pit, and the v-ditch trench will be sampled shortly after pumping begins early next month to dewater the mine pit to prepare for the resumption of aggregate extraction.

3. Methods

Monitoring Well Water Quality Sampling

A qualified subcontractor will be employed to sample the groundwater monitoring wells.

Before each sampling event, measurements of static water level will be taken from the north side of the top of each casing and recorded to the nearest 0.01 foot with respect to the established casing elevation. After collecting static water level measurements, the monitoring wells will be purged of at least three well volumes and sampled. During purging, temperature, pH, and specific conductance parameters of the return water will be periodically measured until the parameters stabilize.

Water samples will be collected from each well into laboratory prepared containers, sealed with tight fitting caps, labeled, and logged into a sample chain-of-custody. Samples will then be stored in a cool ice chest while awaiting delivery to Dellavalle Laboratory, Inc. Dellavalle Laboratory is a California Certified Environmental Laboratory Accreditation Program (ELAP) laboratory.

3.2 Domestic Well Water Quality Sampling

Domestic water samples will be collected from the tap hydraulically nearest each domestic well. The tap will be run for an amount of time sufficient to purge any water standing the pipes.

Water samples will be collected from each well into laboratory prepared containers, sealed with tight fitting caps, labeled, and logged into a sample chain-of-custody. Samples will then be stored in a cool ice chest while awaiting delivery to Dellavalle Laboratory, Inc. Dellavalle Laboratory is a California Certified Environmental Laboratory Accreditation Program (ELAP) laboratory.

3.3 Storage Basin Water Quality Sampling

Grab samples will be collected from four to six locations in each storage basin. The samples will be obtained from a depth of approximately one foot or greater from below the waters surface. These samples will be combined, thoroughly mixed, and the resulting sample will be placed in a laboratory prepared container, sealed, labeled, and stored in an ice chest while awaiting delivery to Dellavalle Laboratory. Dellavalle Laboratory, Inc is a California Certified ELAP laboratory and will perform sample analyses by appropriate analytical methods.

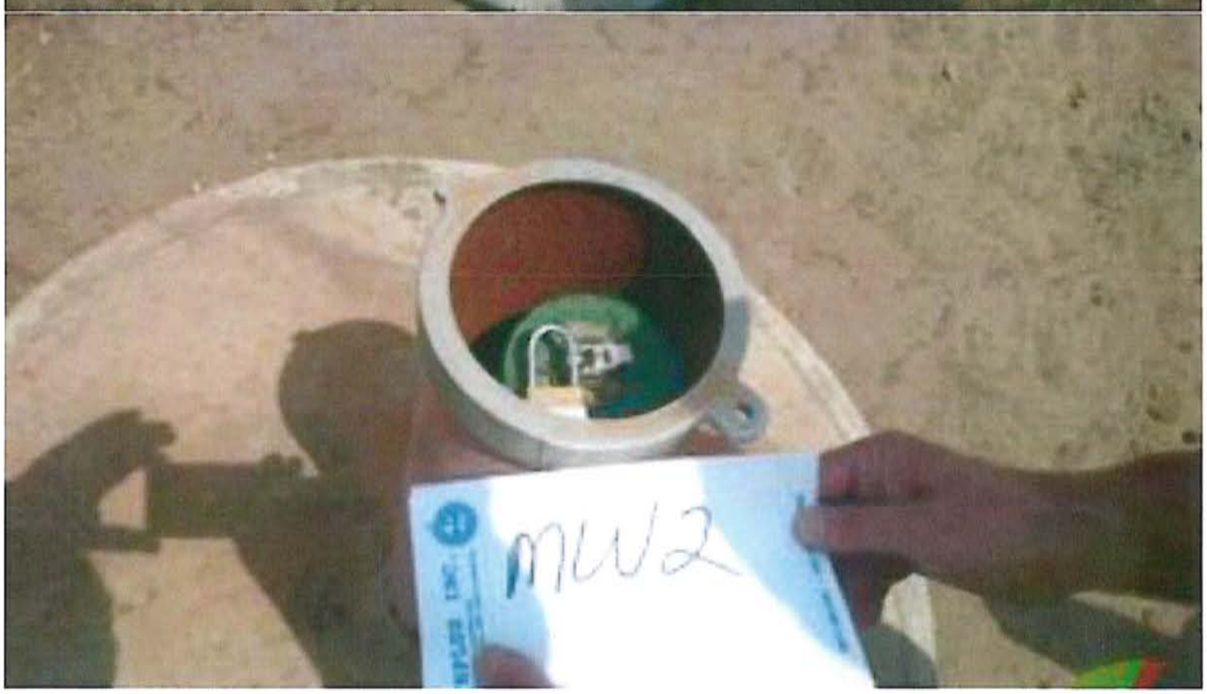
3.4 Groundwater Level Measurement

The groundwater monitoring well static water level measurements will be taken from the north side of the top of each casing and recorded to the nearest 0.01 foot with respect to the established casing elevation.

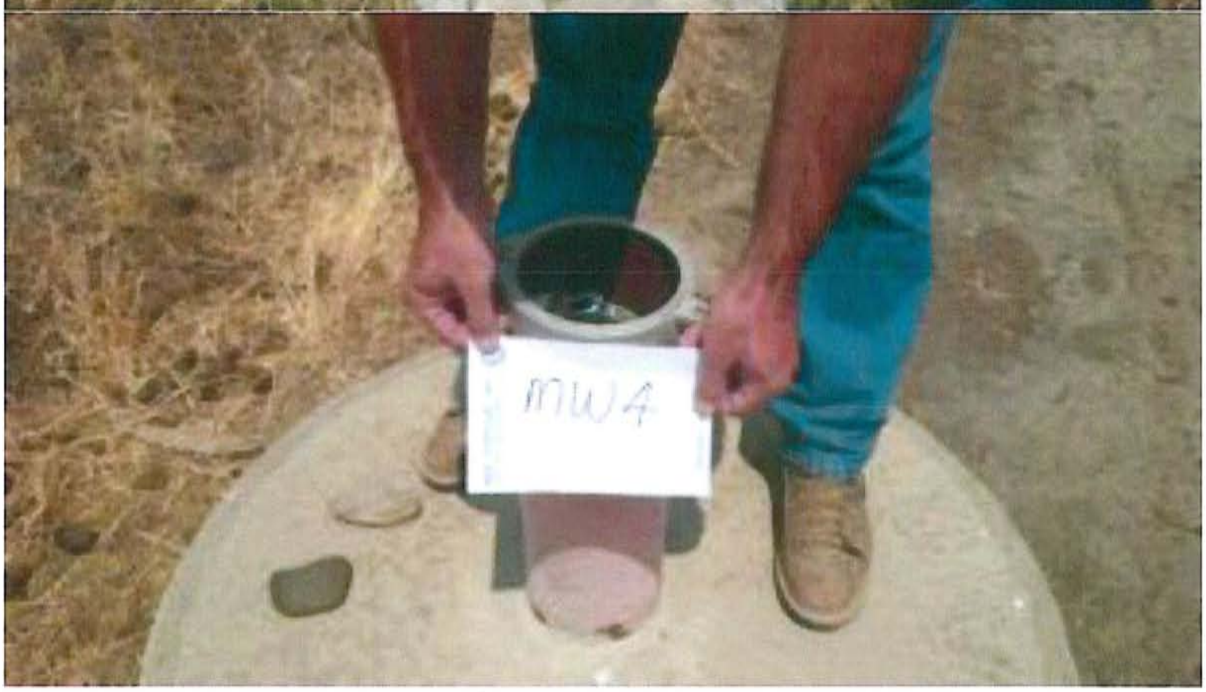
The domestic well static water level measurements will be taken from a hole at the top of each well casing, (provided that a sounding hole is present). A measurement reference point will be established and recorded for each well. Sounding equipment will be sanitized prior to being placed into the well. Water level measurements will be recorded to the nearest 0.01 foot with respect to the established reference point.


CARNES


MW1


MW2


MW3


MW4


Stillwell
#2


WOLFORD

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2006 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
May 11, 2006

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2006

SAMPLE LOCATION / MW - 1 **DATE:** 5/11/2006

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	17:00
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	6.15	FEET	**CALC. PURGE VOL.:**	4.85	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	14.56	GAL.	
STANDING WATER COLUMN:		29.74	FEET	**DEPTH OF PUMP:**	34	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.69	420	20.4	48	0.47	45
	4.85	"	"	7.11	387	18.6	55	0.40	16
	9.71	"	"	7.09	380	18.5	65	0.60	10
	14.56	"	"	7.11	375	18.3	68	0.69	9

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	6.68'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2006

SAMPLE LOCATION / MW -	2	**DATE:**	5/11/2006

PROJECT NAME:		CEMEX		**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY		
ADDRESS:		24325 LOMITAS DR.		**SAMPLE TIME:**	16:24		
CITY, STATE:		LEMONCOVE, CA.		**SAMPLE CONTAINERS:**	2 - LITER PLASTICS		
SITE CONTACT:		GERALD COBURN		**PRESERVATIVES:**	NEAT / HNO3		
CONSULTANT:				**LAB. ANALYSIS BY:**	DELLAVALLE LABS.		
PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	4" /	0.6528	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	RUST TO LIGHT BROWN		
DEPTH TO WATER:	**(feet.100th's)**	9.21	FEET	**CALC. PURGE VOL.:**	25.60	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED:**	76.79	GAL.	
STANDING WATER COLUMN:		39.21	FEET	**DEPTH OF PUMP:**	47	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.44	665	21.0	50.2	0.83	183
	25.60	"	"	7.63	692	21.6	49	1.2	112
	51.19	"	"	7.59	750	21.2	49	1.0	43
	76.79	"	"	7.53	759	21.1	42	1.1	27

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	18.90'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**LOCK IS MISSING.**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2006

SAMPLE LOCATION / MW - 3 **DATE:** 5/11/2006

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	15:00
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN TO CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	6.63	FEET	**CALC. PURGE VOL.:**	5.88	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED:**	17.64	GAL.	
STANDING WATER COLUMN:		36.02	FEET	**DEPTH OF PUMP:**	41	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.45	934	22.1	49.5	0.71	48
	5.88	"	"	7.34	906	21.5	49	0.36	36
	11.76	"	"	7.20	899	21.2	51	0.37	26
	17.64	"	"	7.11	894	21.0	51	0.34	20

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	6.68'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2006

SAMPLE LOCATION / MW -	4	**DATE:**	5/11/2006

PROJECT NAME:	CEMEX		**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY	
ADDRESS:	24325 LOMITAS DR.		**SAMPLE TIME:**	14:05	
CITY, STATE:	LEMONCOVE, CA.		**SAMPLE CONTAINERS:**	2 - LITER PLASTICS	
SITE CONTACT:	GERALD COBURN		**PRESERVATIVES:**	NEAT / HNO3	
CONSULTANT:			**LAB. ANALYSIS BY:**	DELLAVALLE LABS.	
PROJECT MANAGER:	BEN NYDAM		**MONUMENT:**	FLUSH	
SAMPLER:	DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:	Don Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:	GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:		MSL	**COLOR:**	RUST TO CLEAR	
DEPTH TO WATER: (feet.100th's)	8.51	FEET	**CALC. PURGE VOL.:**	13.13	GAL.
DEPTH OF WELL: (feet.100th's)	28.63	FEET	**TOTAL VOLUME PURGED:**	39.40	GAL.
STANDING WATER COLUMN:	20.12	FEET	**DEPTH OF PUMP:**	27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.73	600	22.5	49.8	1.7	147
	13.13	"	"	7.18	797	20.2	55.3	1.7	33
	26.27	"	"	7.17	793	19.8	55.4	1.06	17
	39.40	"	"	6.68	791	19.7	56	1.4	12

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	8.55'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**LOCK IS MISSING !!**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

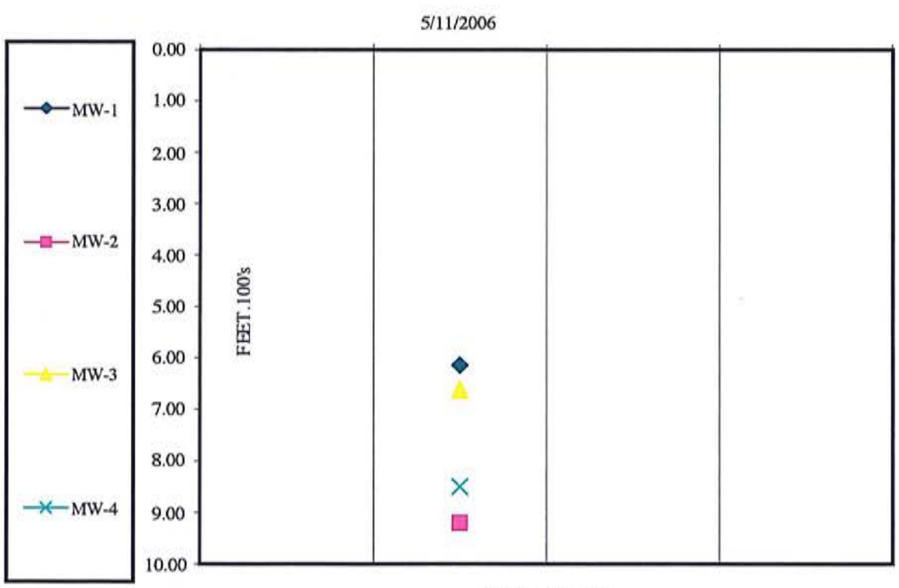
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2006
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE		5/11/06			DEPTH
LOCATION					
MW-1		6.15			35.89'
MW-2		9.21			48.42'
MW-3		6.63			42.65'
MW-4		8.51			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

2007
GROUNDWATER
FIELD MONITORING
SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
June 14, 2007

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2007

SAMPLE LOCATION / MW -	1	**DATE:**	6/14/2007

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	14:10
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BROWN TO LIGHT BROWN TO CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	7.13	FEET	**CALC. PURGE VOL.:**	4.69	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	14.08	GAL.	
STANDING WATER COLUMN:		28.76	FEET	**DEPTH OF PUMP:**	34	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	8.37	386	20.5	202	4.5	206
	4.69	"	"	7.88	292	18.0	214	4.0	123
	9.39	"	"	7.69	277	17.6	201	3.7	89
	14.08	"	"	7.45	266	16.5	178	3.3	77

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	7.17'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2007

SAMPLE LOCATION / MW - 2 **DATE:** 6/14/2007

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	13:43
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:	BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:	DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:	Don Light		**WELL CASING DIA.:**	4" /	0.6528
SAMPLE MEDIA:	GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:		MSL	**COLOR:**	LIGHT BROWN	
DEPTH TO WATER: (feet.100th's)	9.62	FEET	**CALC. PURGE VOL.:**	25.33	GAL.
DEPTH OF WELL: (feet.100th's)	48.42	FEET	**TOTAL VOLUME PURGED:**	75.99	GAL.
STANDING WATER COLUMN:	38.80	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.64	444	20.8	50	3.7	238
	25.33	"	"	7.74	451	20.6	50	3.4	304
	50.66	"	"	7.76	451	20.6	51	3.4	351
	75.99	"	"	7.75	450	20.5	52	3.3	226

PURGE METHOD: CENTRIFUGAL PUMP.
SAMPLE METHOD: CENTRIFUGAL PUMP.
D. T. W. AFTER PURGE: **D. T. W. AT SAMPLE TIME:** 19.02'
WELL INTEGRITY: CAP & SEAL ARE SECURE.
WELL LOCATION: SEE SITE MAP.
REMARKS: **LOCK IS MISSING.**

WEATHER: CLEAR / HOT! **WIND:** NONE
QUALITY CONTROL: *ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*
CONTAINMENT: *D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*

INSTRUMENTATION:
Y.S.I. 3560 FLOWCELL | Y.S.I. DISSOLVED OXYGEN METER
SOLINIST SLOPE METER | THERMODINE 580B P.I.D.
KECK INTERFACE METER | TURBIDITY METER

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2007

SAMPLE LOCATION / MW - 3 **DATE:** 6/14/2007

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	12:45
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN TO CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	3.41	FEET	**CALC. PURGE VOL.:**	6.40	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED:**	19.21	GAL.	
STANDING WATER COLUMN:		39.24	FEET	**DEPTH OF PUMP:**	41	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	7.77	272	19.8	60	5.1	488
	6.40	"	"	7.71	222	18.1	64	5	81
	12.81	"	"	7.64	216	17.5	67	4.8	50
	19.21	"	"	7.56	222	17.6	69	4.7	27

PURGE METHOD: CENTRIFUGAL PUMP.

SAMPLE METHOD: CENTRIFUGAL PUMP.

D. T. W. AFTER PURGE: **D. T. W. AT SAMPLE TIME:** 3.44'

WELL INTEGRITY: CAP & SEAL ARE SECURE.

WELL LOCATION: SEE SITE MAP.

REMARKS:

WEATHER: CLEAR / HOT! **WIND:** NONE

QUALITY CONTROL: *ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*

CONTAINMENT: *D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*

INSTRUMENTATION:

Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER
SOLINIST SLOPE METER	THERMODINE 580B P.I.D.
KECK INTERFACE METER	TURBIDITY METER

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2007

SAMPLE LOCATION / MW -	4	**DATE:**	6/14/2007

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	12:20
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:	BEN NYDAM		**MONUMENT:**	FLUSH		
SAMPLER:	DEL-TECH / DON LIGHT		**WELL CASING MATERIAL :**	PVC		
SIGNED:	Don Light		**WELL CASING DIA. :**	4" /	0.6528	
SAMPLE MEDIA:	GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:		MSL	**COLOR:**	BROWN TO LIGHT BROWN TO CLEAR		
DEPTH TO WATER: (feet.100th's)	6.12	FEET	**CALC. PURGE VOL.:**	14.69	GAL.	
DEPTH OF WELL: (feet.100th's)	28.63	FEET	**TOTAL VOLUME PURGED:**	44.08	GAL.	
STANDING WATER COLUMN:	22.51	FEET	**DEPTH OF PUMP:**	27	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	N/A	0.5 GPM	8.45	590	21.0	72	11	1012
	14.69	"	"	8.10	498	20.1	84	9.4	149
	29.39	"	"	7.78	534	19.7	87	7.5	67
	44.08	"	"	7.66	561	19.7	84	6.6	44

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	6.15'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**LOCK IS MISSING !!**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING EQUIPMENT AND SAMPLING EQUIPMENT WAS CLEANED IN THE FIELD WITH A STEAMCLEANER & ALCONOX SOAP. NEW NITRILE GLOVES.*		
CONTAINMENT:	*D.O.T. 17 55 GAL. STEEL DRUM OR 60 GAL. POLY DRUM.*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	THERMODINE 580B P.I.D.	
	KECK INTERFACE METER	TURBIDITY METER	

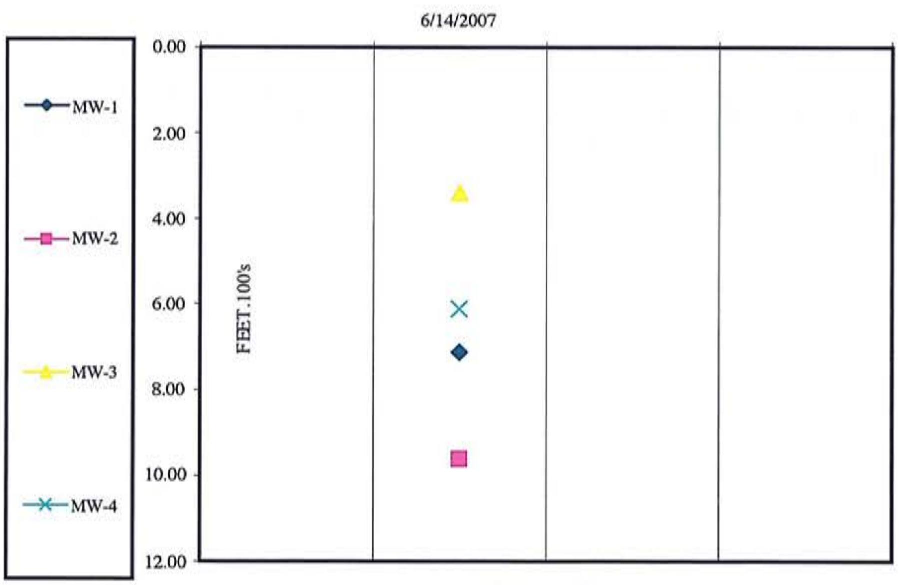
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2007
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE		6/14/07			DEPTH
LOCATION					
MW-1		7.13			35.89'
MW-2		9.62			48.42'
MW-3		3.41			42.65'
MW-4		6.12			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2008 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
August 28, 2008

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2008

SAMPLE LOCATION / MW -	1	**DATE:**	8/28/2008

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	14:47
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:		[signature]		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BROWN TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	7.90	FEET	**CALC. PURGE VOL.:**	4.57	GAL.
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	13.5	GAL.
STANDING WATER COLUMN:		27.99	FEET	**DEPTH OF PUMP:**	34	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	0.5 GPM	6.70	187	22.1	53	2.7	745
	4.57	4.5	"	"	6.14	172	23.8	61	2.2	193
	9.14	9	"	"	6.07	193	23.9	61	2.2	112
	13.70	13.5	"	"	6.02	208	24.1	59	2.2	73

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	8.00'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2008

SAMPLE LOCATION / MW -	2	**DATE:**	8/28/2008

PROJECT NAME:		CEMEX		**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY	
ADDRESS:		24325 LOMITAS DR.		**SAMPLE TIME:**	14:21	
CITY, STATE:		LEMONCOVE, CA.		**SAMPLE CONTAINERS:**	2 - LITER PLASTICS	
SITE CONTACT:		GERALD COBURN		**PRESERVATIVES:**	NEAT / HNO3	
CONSULTANT:				**LAB. ANALYSIS BY:**	DELLAVALLE LABS.	
PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BROWN TO LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	10.54	FEET	**CALC. PURGE VOL.:**	24.73	GAL.
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED:**	75	GAL.
STANDING WATER COLUMN:		37.88	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	0.5 GPM	6.57	591	21.4	58	3.2	165
	24.73	25	"	"	6.95	615	21.4	55	2.5	99
	49.46	50	"	"	6.94	644	21.4	55	2.5	72
	74.18	75	"	"	6.93	683	21.4	56	2.6	59

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	18.13'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2008

SAMPLE LOCATION / MW -	3	**DATE:**	8/28/2008

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	13:30
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL :**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	(feet.100th's)	4.11	FEET	**CALC. PURGE VOL.:**	6.29	GAL.
DEPTH OF WELL:	(feet.100th's)	42.65	FEET	**TOTAL VOLUME PURGED:**	18	GAL.
STANDING WATER COLUMN:		38.54	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	0.5 GPM	6.55	316	20.9	58	3.3	25
	6.29	6	"	"	6.43	243	19.5	63	2.7	17
	12.58	12	"	"	6.38	240	19.5	64	2.4	11
	18.87	18	"	"	6.23	242	19.7	67	2.3	10

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	13.40'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2008

SAMPLE LOCATION / MW -	4	**DATE:**	8/28/2008

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	13:00
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	2 - LITER PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:	BEN NYDAM			**MONUMENT:**	FLUSH		
SAMPLER:	DEL-TECH / ASHLEY LIGHT			**WELL CASING MATERIAL :**	PVC		
SIGNED:	Ashley Light			**WELL CASING DIA. :**	4" /	0.6528	
SAMPLE MEDIA:	GROUNDWATER			**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BROWN TO LIGHT BROWN TO CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	8.50	FEET	**CALC. PURGE VOL.:**	13.14	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED:**	39	GAL.	
STANDING WATER COLUMN:		20.13	FEET	**DEPTH OF PUMP:**	27	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	0.5 GPM	7.00	887	23.1	54	5.2	1000
	13.14	13	"	"	6.75	913	21.2	59	3.9	128
	26.28	26	"	"	6.63	963	21.0	59	3.4	49
	39.42	39	"	"	6.55	976	20.7	60	3.4	30

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	19.17'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

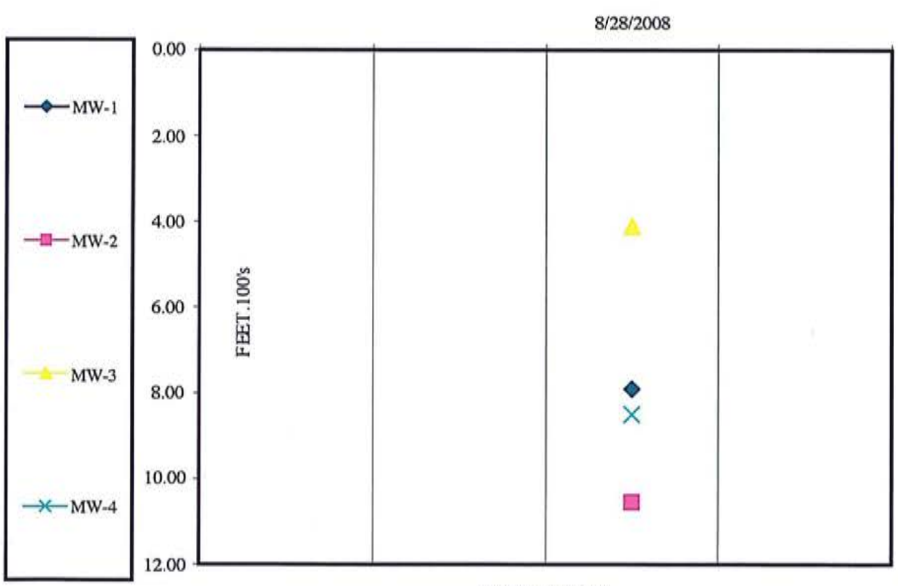
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2008
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE			8/28/08		DEPTH
LOCATION					
MW-1			7.90		35.89'
MW-2			10.54		48.42'
MW-3			4.11		42.65'
MW-4			8.50		28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2010 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
June 23, 2010

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2010

SAMPLE LOCATION / MW -	1	**DATE:**	6/23/2010

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	10:25
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BLACK TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	5.80	FEET	**CALC. PURGE VOL.:**	4.91	GAL.
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED**	15.0	GAL.
STANDING WATER COLUMN:		30.09	FEET	**DEPTH OF PUMP:**	34	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	7.11	407	23.9	155	N/A	1000+
	4.91	5	"	"	7.01	394	21.8	166	"	373
	9.82	10	"	"	6.99	392	20.7	164	"	111
	14.73	15	"	"	7.04	392	20.9	163	"	23

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	10.13'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**INSTALLED TUBING.**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2010

SAMPLE LOCATION / MW -	2	**DATE:**	6/23/2010

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	9:47
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	8.40	FEET	**CALC. PURGE VOL.:**	26.13	GAL.
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED**	78	GAL.
STANDING WATER COLUMN:		40.02	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	8.16	548	21.2	128	N/A	51
	26.13	26	"	"	8.26	553	21.9	122	"	38
	52.25	52	"	"	8.29	551	22.1	125	"	41
	78.38	78	"	"	8.20	553	22	125	"	30

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	15.45'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2010

SAMPLE LOCATION / MW -	3	**DATE:**	6/23/2010

PROJECT NAME:	CEMEX		**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.		**SAMPLE TIME:**	9:03
CITY, STATE:	LEMONCOVE, CA.		**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN		**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:			**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	2.52	FEET	**CALC. PURGE VOL.:**	6.55	GAL.
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED**	10	GAL.
STANDING WATER COLUMN:		40.13	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	7.16	369	21.5	99	N/A	9
	6.55	6.5	"	"	7.12	339	19.2	108	"	6
	13.10	13	"	"	7.06	341	18.5	112	"	4
	19.65	9.5	"	"	7.02	342	18.3	115	"	3

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	2.59'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2010

SAMPLE LOCATION / MW -	4	**DATE:**	6/23/2010

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	8:40
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	5.62	FEET	**CALC. PURGE VOL.:**	15.02	GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED**	45	GAL.
STANDING WATER COLUMN:		23.01	FEET	**DEPTH OF PUMP:**	27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	8.08	1108	22.9	39	N/A	171
	15.02	15	"	"	7.08	1476	21.7	43	"	30
	30.04	30	"	"	7.00	1557	21.1	45	"	19
	45.06	45	"	"	6.97	1552	23.0	49	"	15

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	5.70'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

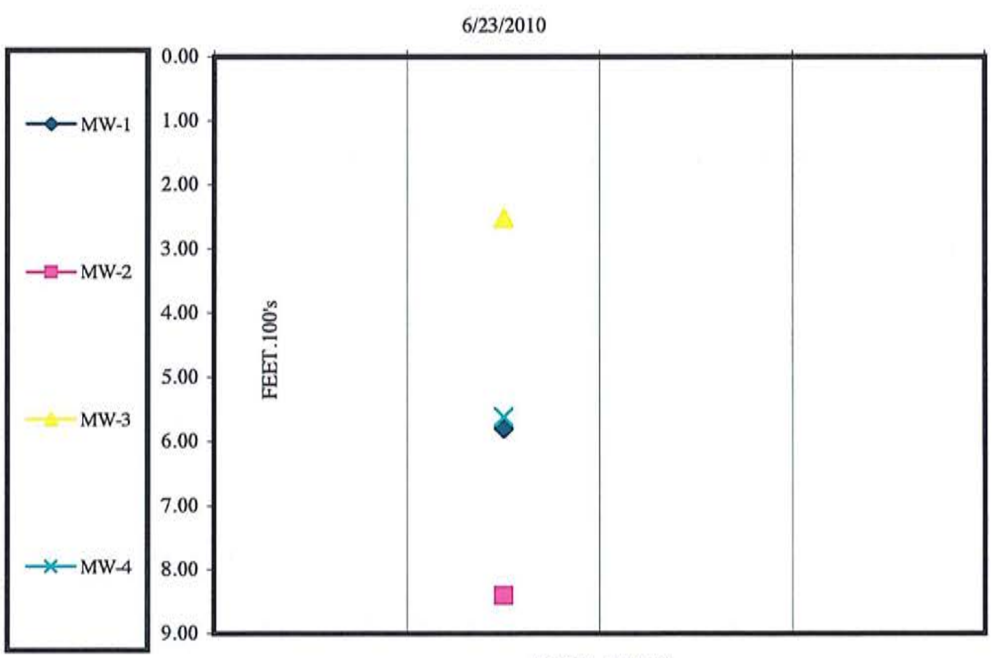
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2010
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3A	QTR. 3A	TOTAL
DATE		6/23/10			DEPTH
LOCATION					
MW-1		5.80			35.89'
MW-2		8.40			48.42'
MW-3		2.52			42.65'
MW-4		5.62			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2011 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
July 11, 2011

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2011

SAMPLE LOCATION / MW -	1	**DATE:**	7/11/2011

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	17:00
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC		
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	BLACK TO CLEAR		
DEPTH TO WATER:	**(feet.100th's)**	6.30	FEET	**CALC. PURGE VOL.:**	4.83	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	15.0	GAL.	
STANDING WATER COLUMN:		29.59	FEET	**DEPTH OF PUMP:**	34	FEET	

FIELD PARAMETERS

TIME	**CUMULATIVE CASING VOLUME PER PURGE**	**ACTUAL VOLUME PURGED**	**DRAW DOWN (D.T.W.)**	**PUMPING RATE (GPM/LPM)**	**pH (units)**	**E. C. (UmMHOS)**	**TEMP. (Celsius)**	**O.R.P. (Mvolts)**	**DISSOLVED OXYGEN (PPM)**	**TURBIDITY COLOR (N.T.U.)**
	0	0	N/A	3.0 GPM	7.18	469	19.6	96	N/A	7
	4.83	5	"	"	7.09	464	19.0	102	"	3
	9.66	10	"	"	7.05	465	19.2	107	"	2
	14.49	15	"	"	7.06	465	19.1	105	"	2

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	8.99'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	
# OF DRUMS ON SIGHT:	**WATER:** 0	**SOIL:** 0	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2011

SAMPLE LOCATION / MW -	2	**DATE:**	7/11/2011

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	16:39
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HN03 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	9.00	FEET	**CALC. PURGE VOL.:**	25.73	GAL.
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED:**	78	GAL.
STANDING WATER COLUMN:		39.42	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	**CUMULATIVE CASING VOLUME PER PURGE**	**ACTUAL VOLUME PURGED**	**DRAW DOWN (D.T.W.)**	**PUMPING RATE (GPM/LPM)**	**pH (units)**	**E. C. (UmMHOS)**	**TEMP. (Celsius)**	**O.R.P. (Mvolts)**	**DISSOLVED OXYGEN (PPM)**	**TURBIDITY COLOR (N.T.U.)**
	0	0	N/A	3.0 GPM	7.61	530	21.4	76	N/A	46
	25.73	26	"	"	7.94	538	21.2	70	"	46
	51.47	52	"	"	7.92	556	21.1	84	"	38
	77.20	78	"	"	7.93	561	21.1	92	"	36

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	9.16'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2011

SAMPLE LOCATION / MW -	3	**DATE:**	7/11/2011

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	16:14
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	2.53	FEET	**CALC. PURGE VOL.:**	6.55	GAL.
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED:**	10	GAL.
STANDING WATER COLUMN:		40.12	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	7.06	485	21.1	30	N/A	14
	6.55	6.5	"	"	6.93	428	18.8	55	"	5
	13.10	13	"	"	6.91	424	19.3	63	"	3
	19.64	9.5	"	"	6.89	423	19.7	72	"	3

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	2.55'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2011

SAMPLE LOCATION / MW -	4	**DATE:**	7/11/2011

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	15:55
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH	
SAMPLER:		DEL-TECH / ASHLEY AVILLA		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Avilla		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	5.69	FEET	**CALC. PURGE VOL.:**	14.98	GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED:**	45	GAL.
STANDING WATER COLUMN:		22.94	FEET	**DEPTH OF PUMP:**	27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	3.0 GPM	7.97	937	23.9	177	N/A	1000+
	14.98	15	"	"	7.41	998	20.9	-9	"	144
	29.95	30	"	"	7.27	1013	20.9	-33	"	60
	44.93	45	"	"	7.20	1024	20.7	-41	"	33

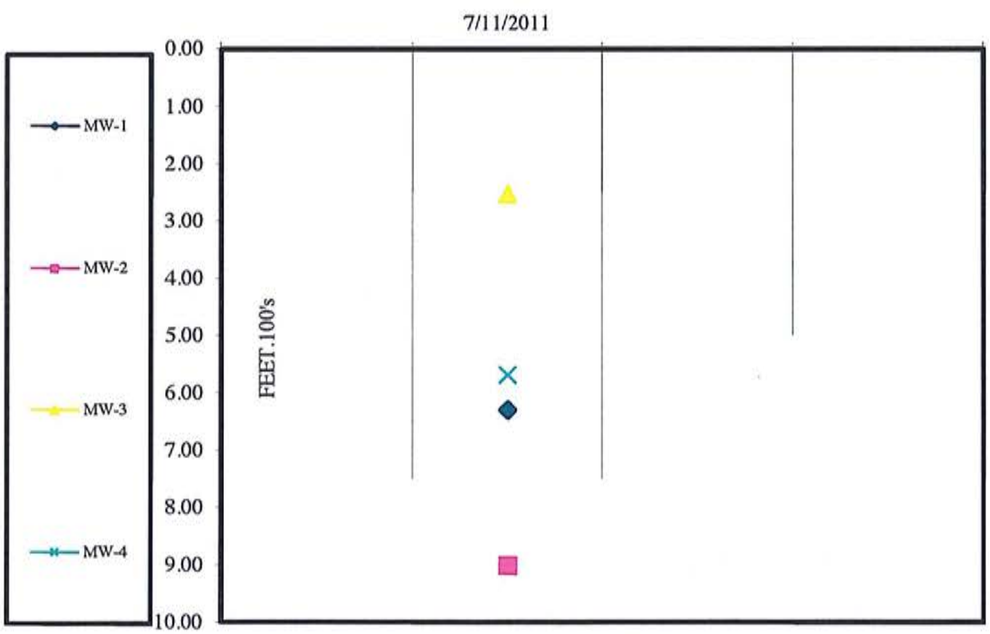
PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	6.09'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT
(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2011
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE		7/11/11			DEPTH
LOCATION					
MW-1		6.30			35.89'
MW-2		9.00			48.42'
MW-3		2.53			42.65'
MW-4		5.69			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2012 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
April 18, 2012

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2012

SAMPLE LOCATION / MW - 1 **DATE:** 4/18/2012

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	18:25
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA.:**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	9.73	FEET	**CALC. PURGE VOL.:**	4.27	GAL.
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	12.0	GAL.
STANDING WATER COLUMN:		26.16	FEET	**DEPTH OF PUMP:**	34	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	2.0 GPM	7.25	562	19.1	154	N/A	19
	4.27	4	"	"	7.03	565	18.1	117	"	6.5
	8.54	8	"	"	7.05	567	18.1	138	"	6
	12.81	12	"	"	7.02	569	18.2	166	"	0.99

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	9.75'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**REPLACED LOCK**		
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2012

SAMPLE LOCATION / MW -	2	**DATE:**	4/18/2012

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	18:05
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	11.04	FEET	**CALC. PURGE VOL.:**	24.40	GAL.
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED:**	74	GAL.
STANDING WATER COLUMN:		37.38	FEET	**DEPTH OF PUMP:**	47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	4.0 GPM	7.47	621	20.6	187	N/A	50.5
	24.40	24.5	"	"	7.82	591	20.7	184	"	28
	48.80	49	"	"	7.72	617	20.7	175	"	24
	73.20	73.5	"	"	7.66	639	20.8	169	"	18

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	21.65'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2012

SAMPLE LOCATION / MW -	3	**DATE:**	4/18/2012

PROJECT NAME:		CEMEX		**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY	
ADDRESS:		24325 LOMITAS DR.		**SAMPLE TIME:**	17:39	
CITY, STATE:		LEMONCOVE, CA.		**SAMPLE CONTAINERS:**	3 - PLASTICS	
SITE CONTACT:		GERALD COBURN		**PRESERVATIVES:**	NEAT / HNO3 / HCL	
CONSULTANT:				**LAB. ANALYSIS BY:**	DELLAVALLE LABS.	
PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Ashley Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	14.52	FEET	**CALC. PURGE VOL.:**	4.59	GAL.
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED:**	14	GAL.
STANDING WATER COLUMN:		28.13	FEET	**DEPTH OF PUMP:**	41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	1.0 GPM	7.12	465	20.4	164	N/A	13
	4.59	4.6	"	"	7.04	515	19.3	163	"	6
	9.18	9	"	"	7.03	526	19.2	169	"	2
	13.77	13.8	"	"	7.04	562	19.1	183	"	1

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	14.70'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2012

SAMPLE LOCATION / MW -	4	**DATE:**	4/18/2012

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	17:17
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH		
SAMPLER:		DEL-TECH / ASHLEY LIGHT		**WELL CASING MATERIAL**	PVC		
SIGNED:		Ashley Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT BROWN TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	17.28	FEET	**CALC. PURGE VOL.:**	7.41	GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED:**	22	GAL.
STANDING WATER COLUMN:		11.35	FEET	**DEPTH OF PUMP:**	27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
	0	0	N/A	1.0 GPM	7.91	1188	21.8	202	N/A	629
	7.41	7.4	"	"	7.41	967	20.9	187	"	52
	14.82	15	"	"	7.13	1001	20.8	173	"	16
	22.23	22.2	"	"	7.05	1001	20.5	166	"	9

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	17.39'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR / HOT!	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

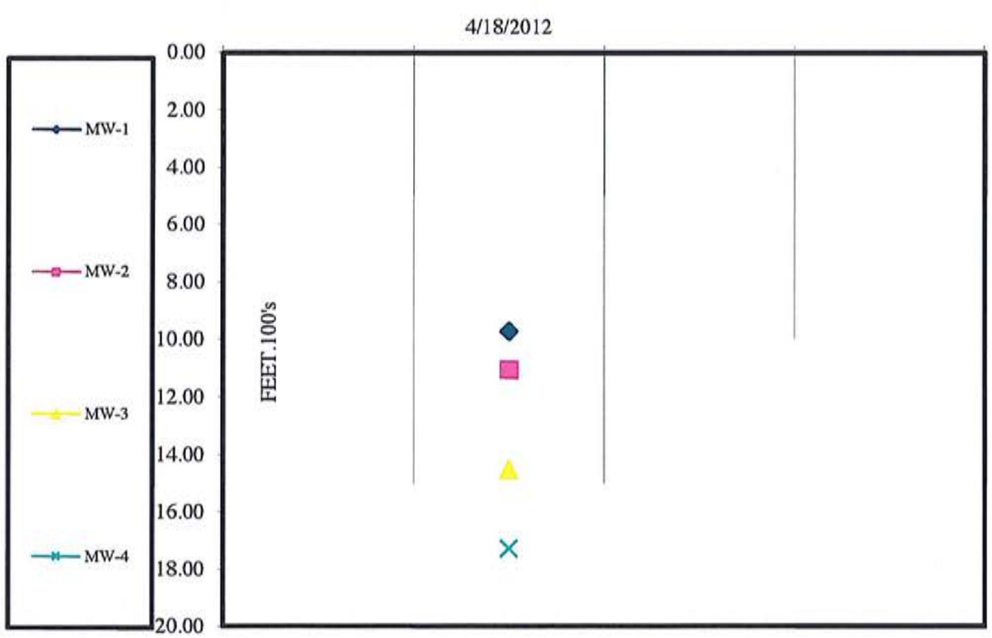
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2012
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE		4/18/12			DEPTH
LOCATION					
MW-1		9.73			35.89'
MW-2		11.04			48.42'
MW-3		14.52			42.65'
MW-4		17.28			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

2013
GROUNDWATER
FIELD MONITORING
SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
June 12, 2013

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2013

SAMPLE LOCATION / MW -	1	DATE:	6/12/2013

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	10:50
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	10.86	FEET	**CALC. PURGE VOL.:**	4.08	GAL.
DEPTH OF WELL:	**(feet.100th's)**	35.89	FEET	**TOTAL VOLUME PURGED:**	12.0	GAL.
STANDING WATER COLUMN:		25.03	FEET	**DEPTH OF PUMP:**	~ 34	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
10:18	0	0	N/A	0.5 GPM	7.87	579	21.0	214	N/A	16
10:26	4.08	4	"	"	7.50	505	17.6	200	"	13
10:34	8.17	8	"	"	7.26	504	17.1	197	"	9
10:42	12.25	12	"	"	7.01	501	17.2	199	"	5
10:50	16.34	16	"	"	7.00	500	17.1	199		5

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	10.89'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2013

SAMPLE LOCATION / MW -	2	**DATE:**	6/12/2013

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	11:27
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLOUDY RUST TO CLEAR	
DEPTH TO WATER:	(feet.100th's)	12.83	FEET	**CALC. PURGE VOL.:**	23.23	GAL.
DEPTH OF WELL:	(feet.100th's)	48.42	FEET	**TOTAL VOLUME PURGED:**	69	GAL.
STANDING WATER COLUMN:		35.59	FEET	**DEPTH OF PUMP:**	~ 47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
10:55	0	0	N/A	2.5 GPM	7.40	676	22.4	166	N/A	43
11:05	23.23	23	"	"	7.98	458	21.8	152	"	28
11:15	46.47	46	"	"	7.88	552	22.1	165	"	11
11:25	69.70	69	"	"	7.80	644	22.4	156	"	8

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	18.72'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2013

SAMPLE LOCATION / MW -	3	**DATE:**	6/12/2013

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	11:50
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	4.72	FEET	**CALC. PURGE VOL.:**	6.19	GAL.
DEPTH OF WELL:	**(feet.100th's)**	42.65	FEET	**TOTAL VOLUME PURGED:**	18	GAL.
STANDING WATER COLUMN:		37.93	FEET	**DEPTH OF PUMP:**	~ 41	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
11:30	0	0	N/A	1.0 GPM	7.96	418	18.5	152	N/A	9
11:36	6.19	6	"	"	7.20	419	18.3	167	"	7
11:42	12.38	12	"	"	6.98	419	18.2	171	"	7
11:48	18.57	18	"	"	6.86	419	18.3	175	"	4

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	5.18'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2013

SAMPLE LOCATION / MW -	4	**DATE:**	6/12/2013

PROJECT NAME:	CEMEX		**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY	
ADDRESS:	24325 LOMITAS DR.		**SAMPLE TIME:**	12:20	
CITY, STATE:	LEMONCOVE, CA.		**SAMPLE CONTAINERS:**	3 - PLASTICS	
SITE CONTACT:	GERALD COBURN		**PRESERVATIVES:**	NEAT / HN03 / HCL	
CONSULTANT:			**LAB. ANALYSIS BY:**	DELLAVALLE LABS.	

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	LIGHT RUST TO CLEAR	
DEPTH TO WATER:	**(feet.100th's)**	6.92	FEET	**CALC. PURGE VOL.:**	14.17	GAL.
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED:**	42	GAL.
STANDING WATER COLUMN:		21.71	FEET	**DEPTH OF PUMP:**	~ 27	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
11:59	0	0	N/A	2 GPM	6.99	682	21.6	170	N/A	358
12:06	14.17	14	"	"	7.30	887	21.3	163	"	103
12:13	28.34	28	"	"	7.27	900	21.2	158	"	40
12:20	42.52	42	"	"	7.26	900	21.2	151	"	15

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	7.17'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	CLEAR	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING IS INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

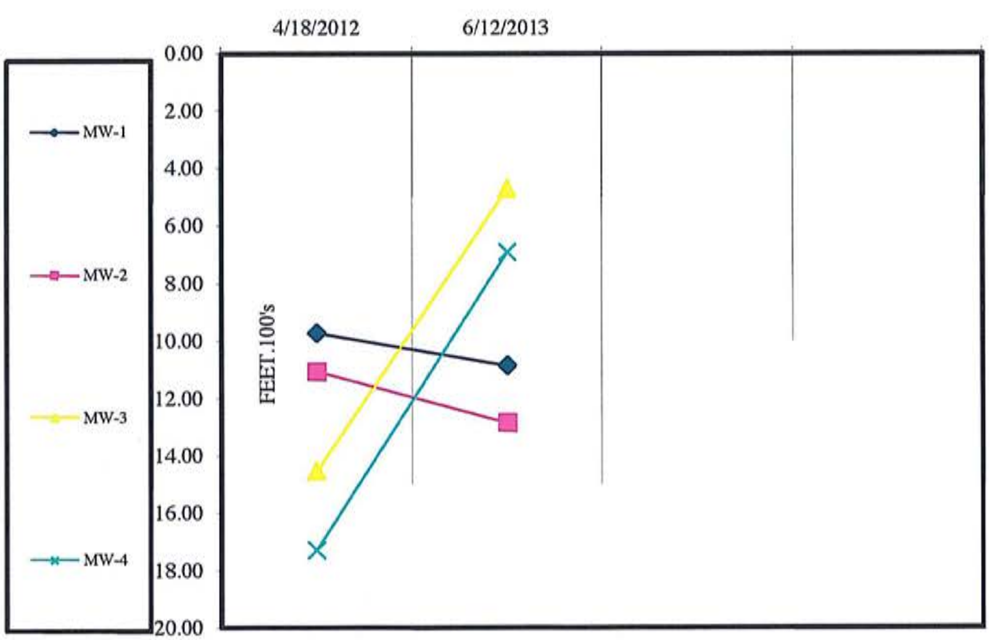
DEL-TECH GEOTECHNICAL SUPPORT

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2013
DEPTH TO WATER MEASUREMENTS

	QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE	4/18/12	6/12/13			DEPTH
LOCATION					
MW-1	9.73	10.86			35.89'
MW-2	11.04	12.83			48.42'
MW-3	14.52	4.72			42.65'
MW-4	17.28	6.92			28.63'



D.T.W. CHART

NOTE: FRONT GATE COMBO = 1230 / M. WELL COMBO = 1942
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DEL-TECH
GEOTECHNICAL SUPPORT SERVICES

2014 GROUNDWATER FIELD MONITORING SUMMARY REPORT

SITE:

CEMEX QUARRY
24325 LOMITAS DR.
LEMONCOVE, CA.
July 30, 2014

10624 OLIVE AVE., OAKDALE, CALIF. 95361 * OFFICE (209) 847-8757 * FAX (209) 847-7744

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2014

SAMPLE LOCATION / MW -	1	**DATE:**	7/30/2014

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	20:22
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLOUDY LT. RUSTY TO CLEAR		
DEPTH TO WATER:	(feet.100th's)	14.91	FEET	**CALC. PURGE VOL.:**	3.42	GAL.	
DEPTH OF WELL:	(feet.100th's)	35.89	FEET	**TOTAL VOLUME PURGED**	12	GAL.	
STANDING WATER COLUMN:		20.98	FEET	**DEPTH OF PUMP:**	~ 34	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
20:09	0	0		1.0 GPM	6.93	732	22.4	4		
20:13	3.42	4		"	6.70	709	22.2	5		
20:17	6.85	8		"	6.61	706	22.2	42		
20:21	10.27	12		"	6.58	709	22.4	60		4
20:22	SAMPLED									

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	15.00'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	PARTLY CLOUDY / HOT	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2014

SAMPLE LOCATION / MW -	2	**DATE:**	7/30/2014

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	20:00
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HN03 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST	
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC	
SIGNED:		Don Light		**WELL CASING DIA. :**	4" /	0.6528
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE
TOP OF CASING ELEVATION:			MSL	**COLOR:**	RUSTY	
DEPTH TO WATER:	**(feet.100th's)**	18.61	FEET	**CALC. PURGE VOL.:**	19.46	GAL.
DEPTH OF WELL:	**(feet.100th's)**	48.42	FEET	**TOTAL VOLUME PURGED**	100	GAL.
STANDING WATER COLUMN:		29.81	FEET	**DEPTH OF PUMP:**	~ 47	FEET

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
19:49	0	0		10 GPM	6.78	680	23.8	50		
19:51	19.46	20		"	7.80	555	23.3	36		
19:53	38.92	40		"	7.91	527	21.8	23		
19:55	58.38	60		"	7.82	518	21.6	16		
19:59	77.84	100		"	7.07	795	21.9	26		1250
20:00	SAMPLED									

PURGE METHOD:	3" GRUNDFOS SUBMERSIBLE PUMP		
SAMPLE METHOD:	3" GRUNDFOS SUBMERSIBLE PUMP		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	42.10'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:	**WELL TURNED VERY TURBID, DARK RUSTY DISCHARGE WATER.**		
	RAN ADDITIONAL PURGE TO SEE IF IMPROVED. WORSENED.		
WEATHER:	PARTLY CLOUDY / HOT	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2014

SAMPLE LOCATION / MW -	3	**DATE:**	7/30/2014

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	19:41
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	POST		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	2" /	0.1632	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	CLOUDY LT. BROWN TO CLEAR		
DEPTH TO WATER:	(feet.100th's)	17.80	FEET	**CALC. PURGE VOL.:**	4.06	GAL.	
DEPTH OF WELL:	(feet.100th's)	42.65	FEET	**TOTAL VOLUME PURGED**	12	GAL.	
STANDING WATER COLUMN:		24.85	FEET	**DEPTH OF PUMP:**	~ 41	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
19:28	0	0		1.0 GPM	7.04	796	25.3	6		
19:32	4.06	4		"	6.92	725	24.5	-41		
19:36	8.11	8		"	6.85	702	22.7	15		
19:40	12.17	12		"	6.78	688	22.3	35		3
19:41	SAMPLED									

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	18.16'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	PARTLY CLOUDY / HOT	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

DEL-TECH GEOTECHNICAL SUPPORT SERVICES

MONITORING WELL FIELD LOG 2014

SAMPLE LOCATION / MW - 4 **DATE:** 7/30/2014

PROJECT NAME:	CEMEX	**ANALYSIS PERFORMED:**	SEE CHAIN OF CUSTODY
ADDRESS:	24325 LOMITAS DR.	**SAMPLE TIME:**	19:19
CITY, STATE:	LEMONCOVE, CA.	**SAMPLE CONTAINERS:**	3 - PLASTICS
SITE CONTACT:	GERALD COBURN	**PRESERVATIVES:**	NEAT / HNO3 / HCL
CONSULTANT:		**LAB. ANALYSIS BY:**	DELLAVALLE LABS.

PROJECT MANAGER:		BEN NYDAM		**MONUMENT:**	FLUSH		
SAMPLER:		DEL-TECH / DON LIGHT		**WELL CASING MATERIAL**	PVC		
SIGNED:		Don Light		**WELL CASING DIA. :**	4" /	0.6528	
SAMPLE MEDIA:		GROUNDWATER		**P.I.D. READING / ODOR:**	N/A	NONE	
TOP OF CASING ELEVATION:			MSL	**COLOR:**	RUSTY TO LIGHT TAN		
DEPTH TO WATER:	**(feet.100th's)**	20.00	FEET	**CALC. PURGE VOL.:**	5.63	GAL.	
DEPTH OF WELL:	**(feet.100th's)**	28.63	FEET	**TOTAL VOLUME PURGED**	18	GAL.	
STANDING WATER COLUMN:		8.63	FEET	**DEPTH OF PUMP:**	~ 27	FEET	

FIELD PARAMETERS

TIME	CUMULATIVE CASING VOLUME PER PURGE	ACTUAL VOLUME PURGED	DRAW DOWN (D.T.W.)	PUMPING RATE (GPM/LPM)	pH (units)	E. C. (UmMHOS)	TEMP. (Celsius)	O.R.P. (Mvolts)	DISSOLVED OXYGEN (PPM)	TURBIDITY COLOR (N.T.U.)
19:00	0	0		1.0 GPM	8.08	912	25.9	79		
19:06	5.63	6		"	7.52	858	24.1	91		
19:12	11.27	12		"	7.07	873	23.9	83		
19:18	16.90	18		"	6.98	859	23.8	71		8
19:19	SAMPLED									

PURGE METHOD:	CENTRIFUGAL PUMP.		
SAMPLE METHOD:	CENTRIFUGAL PUMP.		
D. T. W. AFTER PURGE:		**D. T. W. AT SAMPLE TIME:**	20.16'
WELL INTEGRITY:	CAP & SEAL ARE SECURE.		
WELL LOCATION:	SEE SITE MAP.		
REMARKS:			
WEATHER:	PARTLY CLOUDY / HOT	**WIND:**	NONE
QUALITY CONTROL:	*ALL PURGING AND MONITORING EQUIPMENT WAS CLEANED AS NECESSARY.*		
	DEDICATED PURGE TUBING INSTALLED IN EACH WELL. NEW NITRILE GLOVES.		
CONTAINMENT:	*NO CONTAINMENT / PURGE WATER TO THE GROUND*		
INSTRUMENTATION:	Y.S.I. 3560 FLOWCELL	Y.S.I. DISSOLVED OXYGEN METER	
	SOLINIST SLOPE METER	TURBIDITY METER	

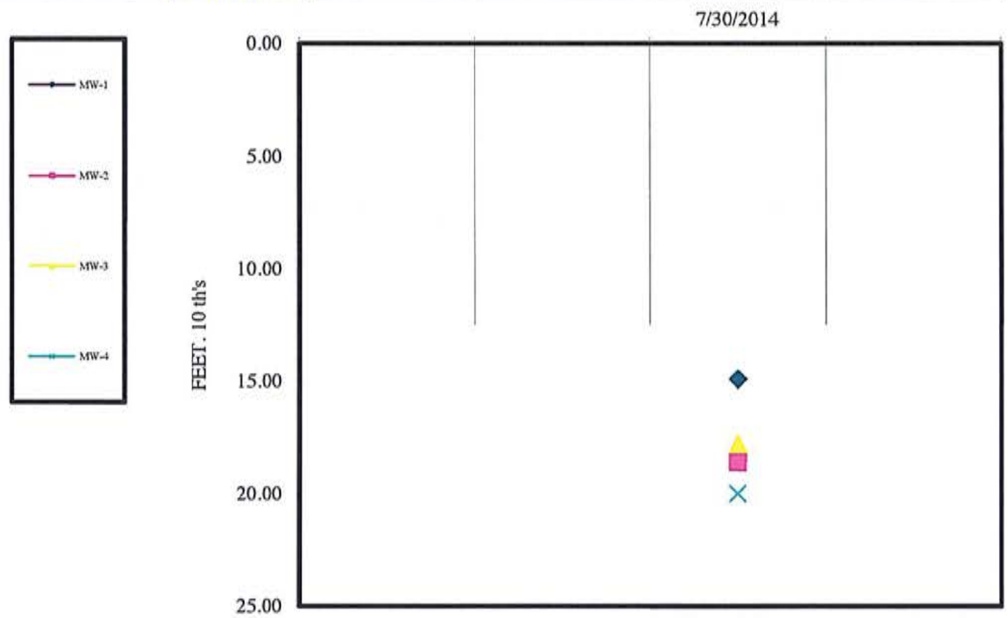
DEL-TECH GEOTECHNICAL SUPPORT, INC.

(209) 847-8757 (OFFICE) * (209) 847-7744 (FAX) * deltech1@pacbell.net (Email)

CEMEX QUARRY
24325 LOMITAS DR. / LEMON COVE, CA.

MONITORING WELL FIELD SUMMARY LOG 2014
DEPTH TO WATER MEASUREMENTS

		QTR. 1	QTR. 2	QTR. 3	QTR. 4	TOTAL
DATE	MONUMENT			7/30/14		DEPTH
LOCATION						
MW-1	POST			14.91		35.89'
MW-2	POST			18.61		48.42'
MW-3	POST			17.80		42.65'
MW-4	POST			20.00		28.63'



D.T.W. CHART

NOTE:
ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL CASING. THE TOP OF CASING WITH A NOTCH OR PERMENANT MARKINGS, WHICH EVER ONE CONDITION IS APPROPRIATE.

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
58

Material Submitted: Water

Lab No. 93772
Sample Date 5/11/2006
Sample Time
Submitted Date 5/12/2006
Submitted by Gerald Coburn - Plnt Mgr
Reported Date 5/19/2006
Location/Project Stillwell -Grndwtr Monitoring
Copy To
Fax
e-mail

No.	Description	unit pH	mg/L NO3	SO4	TDS	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	**Ca**	**Mg**	**Na**	**K**	Fe
	MDL--->		0.04	0.03	10		0.9	3	0.03	0.1	0.1	0.2	0.3	0.004
	RL--->	1.0 ± 14.0	0.45	0.2	10	10	1	5	0.1	0.1	0.1	1.0	0.5	0.1
	SM--->	4500H-B	4500NO3E		2540C	2320B	2320B	2320B	4500Cl C	3120B	3120B	3120B	3120B	3120B
	EPA--->		300.0	300.0					300.0	200.7	200.7	200.7	200.7	
1	MW1 17:00	7.2	22.6	<0.2	263	126	<1	126	15.8	45.0	8.5	26.4	3.2	0.2
2	MW2 16:24	7.8	52.5	<0.2	613	259	<1	259	20.5	61.8	30.2	48.8	6.3	3.1
3	MW3 15:00	7.3	59.8	<0.2	660	285	<1	285	33.5	89.7	25.2	76.7	6.3	0.3
4	MW4 14:05	7.5	79.1	<0.2	605	286	<1	286	32.8	78.2	21.7	65.9	4.6	1.6

*See external laboratory documentation

***NOTE:* For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO_3 to pH <2**

ND = None Detected

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Records retained for 5 yrs.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

RMC Pacific Materials
24325 Lomitas Dr. Plant 133
Lemon Cove CA 93244
13588
08

Material Submitted

Lab No. 85263
Sample Date 5/19/2005
Sample Time
Submitted Date 5/20/2005
Submitted by Gerald Coburn
Reported Date 6/1/2005
Location/Project Stillwell Project - Groundwater Monitoring
Copy To
FAX
E-Mail

No.	Description	Unit: pH	mg/L: TDS	Na	K	Ca	Mg	Cl	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Total Alkalinity as $CaCO_3$	SO_4	NO_3	Fe
	MDL-->		10	1.5	0.3	0.1	0.1	0.03	0.9	3		0.03	0.04	0.004
	RL-->	1.0 ± 14.0	10	1.0	0.5	0.1	0.1	0.1	1	5.0	10.0	0.2	0.45	0.1
	SM-->	4500H-B	2540C	3120B	3120B	3120B	3120B	4500Cl C	2320B	2320B	2320B	4500SO4 E	4500NO3E	3120B
	EPA-->							300.0				300.0	300.0	
1	Monitoring Well MW1 11:08am	7.0	206	29.1	2.5	33.3	6.4	17.6	<1	101	101	43.5	17.1	0.9
2	MW2 12:24pm	7.9	489	60.6	6.1	55.3	30.2	24.8	<1	179	179	127	67.7	4.3
3	MW3 12:48pm	7.5	652	90.2	5.0	92.3	25.4	46.1	<1	293	293	143	44.3	0.5
4	MW4 13:20pm	7.6	559	74.0	3.5	81.2	21.5	34.9	<1	233	233	108	83.5	2.4

***NOTE:* For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO_3 to pH <2**

MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
EPA = Environmental Protection Agency methods used unless otherwise indicated.

Approved By: ____________________

ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
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Report of Water Analysis

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Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120659
Sample Date 9/9/2008
Sample Time
Submitted Date 9/9/2008
Submitted by Gerald Coburn-Plant Manager
Reported Date 9/23/2008
Location/Project Stillwell Project - Domestic Well Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Total Ca	Total Mg	Total Na
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500			
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	1.5
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B
EPA-->						300	300	300	300				
Analysis Date:	9/9/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/9/2008	9/11/2008	9/11/2008	9/11/2008
001 Weller - Domestic Well 08:25	7.5	80	<1	<1	80	7.9	23.0	2.8	12.3	148	23.8	4.1	11
002 Stillwell - Domestic Well 08:10	7.2	180	<1	<1	180	18.8	49.7	17.8	78.8	432	65.6	23.0	32
003 Morton - Domestic Well 07:55	7.4	253	<1	<1	253	39.2	95.4	16.9	74.7	592	73.4	20.9	51
004 Caines - Domestic Well 07:45	6.9	222	<1	<1	222	23.8	74.9	26.5	118	548	78.3	21.6	47

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120659
Sample Date 9/9/2008
Sample Time
Submitted Date 9/9/2008
Submitted by Gerald Coburn-Plant Manager
Reported Date 9/23/2008
Location/Project Stillwell Project - Domestic Well Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	Total Fe	Total K	Dissolved *Fe
	mg/L	mg/L	
MCL-->	0.30		
MDL-->	0.004	0.3	
RL-->	0.01	0.5	
SM-->	3120 B	3120 B	
EPA-->			
Analysis Date:	9/11/2008	9/11/2008	Send Out
001 Weller - Domestic Well 08:25	1.33	1.9	*
002 Stillwell - Domestic Well 08:10	2.96	3.4	*
003 Morton - Domestic Well 07:55	0.22	3.8	*
004 Caines - Domestic Well 07:45	0.15	2.8	*

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

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Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120142
Sample Date 8/28/2008
Sample Time
Submitted Date 8/28/2008
Submitted by Gerald Coburn-Plant Mgr
Reported Date 9/16/2008
Location/Project Stillwell Proj-GW Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL—>						250	250	10	45	500					0.30
MDL—>			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.004
RL—>	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.01
SM—>	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA—>						300	300	300	300						
Analysis Date:	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	9/4/2008	9/4/2008	9/4/2008	9/4/2008	9/4/2008
001 MW-1 14:47	6.8	89	<1	<1	89	3.1	7.1	0.5	2.03	596	25.4	4.3	10	2.2	2.42
002 MW-2 14:21	7.9	192	<1	<1	192	20.6	99.6	5.5	24.3	375	37.2	29.8	52	8.1	2.91
003 MW-3 13:30	7.2	111	<1	<1	111	0.8	1.6	<0.1	<0.45	132	23.3	6.4	12	2.0	0.42
004 MW-4 13:00	7.5	222	<1	<1	222	355	501	68.7	304	580	85.0	24.2	78	4.2	2.04

*See external laboratory documentation
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; RL = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
EPA = Environmental Protection Agency methods used unless otherwise indicated.
Dissolved metals (**bolded**) were filtered.
MBAS molecular weight = 340 grams.
QA/QC available upon request.

Approved By: ______________________
ELAP Certification #1595

DELLAVALLE
Laboratory, Inc.
Chemists and Consultants

July 31, 2006

Gerald Coburn
CEMEX #13588
13475 N. Friant Road
Friant, Ca 93626

Re: Lab No. 95594, 95595

Dear Gerald,

Enclosed are the results of analysis for the domestic well water and pond water samples recently collected to meet Tulare Counties annual sampling requirements.

If you have any questions, please call me.

Respectfully,
Ben Nydam

Ben Nydam
Certified Crop Advisor # 22552

BN/sd

Enclosures

DELLAVALLE Laboratory, Inc.
Chemists and Consultants
1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 95594
Sample Date 6/26/2006
Sample Time
Submitted Date 6/26/2006
Submitted by Gerald Coburn-P M
Reported Date 7/7/2006
Location/Project Stillwell D.Well Monitoring
Copy To
Fax
e-mail

No.	Description	pH (unit)	NO_3 (mg/L)	SO_4	TDS	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	Ca	Mg	Na	Fe	K
	MDL--->		0.04	0.03	10		0.9	3	0.03	0.1	0.1	1.5	0.004	0.3
	RL--->	1.0 ± 14.0	0.45	0.2	10	10	1	5	0.1	0.1	0.1	1	0.1	0.5
	SM--->	4500H-B	4500NO3E		2540C	2320B	2320B	2320B	4500Cl C	3120B	3120B	3120B	3120B	3120B
	EPA--->		300.0	300.0					300.0					
1	Stillwell - domestic well 07:35	7.5	53.36	48.0	398	167	<1	167	13.1	57.7	20.3	27	0.2	2.5
2	Morton - domestic well 07:20	7.8	75.75	84.1	565	220	<1	220	26.0	78.5	23.1	58	<0.1	4.0
3	Caimes - domestic well 07:00	7.5	81.52	56.4	515	217	<1	217	20.0	72.2	20.9	43	<0.1	2.7

*See external laboratory documentation for Ferrous Iron from Basic Laboratory

***NOTE:* For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO_3 to pH <2**

ND = None Detected

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Records retained for 5 yrs.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 95595
Sample Date
Sample Time
Submitted Date 6/26/2006
Submitted by Gerald Coburn-Plant Manager
Reported Date 7/7/2006
Location/Project Stillwell Project - Ponds
Copy To
Fax
e-mail

		unit	mg/L											
No.	Description	pH	NO_3	SO_4	TDS	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	Ca	Mg	Na	Fe	K
	MDL--->		0.04	0.03	10		0.9	3	0.03	0.1	0.1	1.5	0.004	0.3
	RL--->	1.0 ± 14.0	0.45	0.2	10	10	1	5	0.1	0.1	0.1	1	0.1	0.5
	SM--->	4500H-B	4500NO3E		2540C	2320B	2320B	2320B	4500Cl C	3120B	3120B	3120B	3120B	3120B
	EPA--->		300.0	300.0					300.0					
1	Pump Basin 08:30	7.7	<0.40	19.6	200	141	<1	141	11.7	41.1	7.8	13	0.6	4.0
2	Recharge Basin 08:40	7.8	3.18	15.5	113	69	<1	69	7.3	21.6	4.0	11	0.1	1.7

*See external laboratory documentation for Ferrous Iron from Basic Laboratory

***NOTE:** For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO_3, to pH <2*

ND = None Detected

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Records retained for 5 yrs.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE
Laboratory, Inc.
Chemists and Consultants

June 19, 2006

Gerald Coburn
Cemex #13588
13475 N. Friant Road
Friant, CA 93626

Lab No.: 93772 & 94297

Dear Gerald,

Enclosed are the results for the annual monitoring well water samples recently collected on May 11, 2006.

If you have any questions, please call me.

Respectfully,

Ben Nydam

Ben Nydam
Certified Crop Advisor # 22552
Dellavalle Laboratory, Inc.

BN:pjm
Enclosures

F:\2005-2006\2005-2006 Jun\BN\Cemex93772,94297.doc

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants
1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
58

Lab No. 93772
Sample Date 5/11/2006
Sample Time
Submitted Date 5/12/2006
Submitted by Gerald Coburn - Plnt Mgr
Reported Date 5/19/2006
Location/Project Stillwell -Grndwtr Monitoring
Copy To
Fax
e-mail

Material Submitted: Water

No.	Description	unit pH	NO$_3$ (mg/L)	SO$_4$ (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO$_3$ (mg/L)	CO$_3$ as CaCO$_3$ (mg/L)	HCO$_3$ as CaCO$_3$ (mg/L)	Cl (mg/L)	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	Fe (mg/L)
	MDL--->		0.04	0.03	10		0.9	3	0.03	0.1	0.1	0.2	0.3	0.004
	RL--->	1.0 ± 14.0	0.45	0.2	10	10	1	5	0.1	0.1	0.1	1.0	0.5	0.1
	SM--->	4500H-B	4500NO3E		2540C	2320B	2320B	2320B	4500Cl C	3120B	3120B	3120B	3120B	3120B
	EPA--->		300.0	300.0					300.0	200.7	200.7	200.7	200.7	
1	MW1 17:00	7.2	22.6	<0.2	263	126	<1	126	15.8	45.0	8.5	26.4	3.2	0.2
2	MW2 16:24	7.8	52.5	<0.2	613	259	<1	259	20.5	61.8	30.2	48.8	6.3	3.1
3	MW3 15:00	7.3	59.8	<0.2	660	285	<1	285	33.5	89.7	25.2	76.7	6.3	0.3
4	MW4 14:05	7.5	79.1	<0.2	605	286	<1	286	32.8	78.2	21.7	65.9	4.6	1.6

*See external laboratory documentation

***NOTE:* For dissolved metals (bolded), all water samples were filtered when received in the laboratory and acidified with HNO_3 to pH <2**

ND = None Detected

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Records retained for 5 yrs.

Approved By: ____________________

ELAP Certification #1595

Cemex Construction Material LP #13588/08
Attn Gerald Coburn
Project: Stillwell Project-Domestic Well Monitoring

basic laboratory
www.basiclab.com
phone 530.243.7234 2218 Railroad Avenue
fax 530.243.7494 Redding, California 96001

Report To: DELLAVALLE LABORATORY, INC
1910 W MCKINLEY, SUITE 110
FRESNO, CA 93728
Attention: DELLAVALLE LABORATORY, INC
Project: GENERAL TESTING 108518

Lab No: 7100307
Reported: 10/19/07
Phone: (559) 233-6129
P.O. # 24974

General Chemistry

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
108518-1 WELLER Water (7100307-01) Sampled:10/08/07 13:00 Received:10/09/07 10:20									
Ferrous Iron	ug/l	ND		20	50	HACH 8146	10/09/07	10/09/07	B7J0220
108518-2 STILLWELL Water (7100307-02) Sampled:10/08/07 12:50 Received:10/09/07 10:20									
Ferrous Iron	ug/l	ND		20	50	HACH 8146	10/09/07	10/09/07	B7J0220
108518-3 MORTON Water (7100307-03) Sampled:10/08/07 12:40 Received:10/09/07 10:20									
Ferrous Iron	ug/l	ND		20	50	HACH 8146	10/09/07	10/09/07	B7J0220
108518-4 CAINES Water (7100307-04) Sampled:10/08/07 12:30 Received:10/09/07 10:20									
Ferrous Iron	ug/l	ND		20	50	HACH 8146	10/09/07	10/09/07	B7J0220

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
<	Less than reporting limit
≤	Less than or equal to reporting limit
>	Greater than reporting limit
≥	Greater than or equal to reporting limit
MDL	Method Detection Limit
RL/ML	Minimum Level of Quantitation
MCL/AL	Maxium Contaminant Level/Action Level
mg/kg	Results reported as wet weight
TTLC	Total Threshold Limit Concentration
STLC	Soluble Threshold Limit Concentration
TCLP	Toxicity Characteristic Leachate Procedure

Approved By
Basic Laboratory, Inc.
California D.O.H.S. Cert #1677

DELLAVALLE®
Laboratory, Inc.
Chemists and Consultants

July 20, 2006

Cemex #13588
13475 N Friant Rd
Friant, CA 93626

Re: Lab No. 104616

Dear Gerald:

Enclosed are the results for the annual monitoring well water samples recently collected on June 14, 2007.

If you have any questions, please call me.

Respectfully,

Ben Nydam

Ben Nydam
Irrigation Specialist, BS, CCA

BN:lf

Enclosures

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Lab No. 104616
Sample Date 6/14/2007
Sample Time
Submitted Date 6/14/2007
Submitted by G Coburn/A Light/Del-Tech
Reported Date 6/29/2007
Location/Project Stillwell Proj-GW Monitoring
Copy To
Fax
e-mail

Material Submitted: Water

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO_4	NO_3-N	NO_3	TDS	**Ca**	**Mg**	**Na**	**K**	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500					0.30
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.004
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.01
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	4500Cl C	4500SO4 E	4500NO3 E	4500NO3 E	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA-->						300	300	300	300		200.7	200.7	200.7	200.7	
Analysis Date:	6/15/2007	6/16/2007	6/16/2007	6/16/2007	6/16/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/25/2007
001 MW 1 14:10	7.6	141	<1	<1	141	12.4	37.2	0.4	1.59	248	40.4	7.1	24	2.0	1.69
002 MW 2 13:43	8.1	228	<1	<1	228	21.7	107	14.8	65.5	515	60.4	29.1	49	5.6	15.4
003 MW 3 12:45	7.7	109	<1	<1	109	13.4	27.1	1.5	6.78	205	30.4	8.6	17	1.6	0.46
004 MW 4 12:20	8.0	234	<1	<1	234	38.7	79.4	12.3	54.6	512	59.5	19.3	63	2.8	1.97

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 108120
Sample Date 9/25/2007
Sample Time 10:45
Submitted Date 9/25/2007
Submitted by Gerald Coburn
Reported Date 10/4/2007
Location/Project Stillwell Project-Domestic Well Monitoring
Copy To
Fax
e-mail

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL—>						250	250	10	45	500			
MDL—>			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2
RL—>	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1
SM—>	4500H B	2320 B	2320 B	2320 B	2320 B	4500Cl C	4500SO4 E	4500NO3 E	4500NO3 E	2540 C	3120 B	3120 B	3120 B
EPA—>						300	300	300	300		200.7	200.7	200.7
Analysis Date:	9/27/2007	10/1/2007	10/1/2007	10/1/2007	10/1/2007	9/26/2007	9/26/2007	9/26/2007	9/26/2007	10/1/2007	9/26/2007	9/26/2007	9/26/2007
001 Weller-Domestic Well 10:45	7.1	152	<1	<1	152	17.7	61.2	15.9	70.3	295	42.6	16.8	27
002 Stillwell-Domestic Well 10:30	7.0	183	<1	<1	183	30.5	110	17.7	78.5	425	61.8	22.2	32
003 Morton-Domestic Well 10:20	7.2	235	<1	<1	235	24.4	78.7	28.1	124	580	83.9	24.6	64
004 Cairnes-Domestic Well 10:10	7.2	218	<1	<1	218	75.5	107	18.4	81.5	562	82.9	23.4	53

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

Approved By: ____________________

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No.	108120
Sample Date	9/25/2007
Sample Time	10:45
Submitted Date	9/25/2007
Submitted by	Gerald Coburn
Reported Date	10/4/2007
Location/Project	Stillwell Project-Domestic Well Monitoring
Copy To	
Fax	
e-mail	

	K	Total Fe
	mg/L	mg/L
MCL-->		0.30
MDL-->	0.3	0.004
RL-->	0.5	0.01
SM-->	3120 B	3120 B
EPA-->	200.7	
Analysis Date:	9/26/2007	10/1/2007
001 Weller-Domestic Well 10:45	4.7	0.48
002 Stillwell-Domestic Well 10:30	2.6	0.21
003 Morton-Domestic Well 10:20	4.1	0.15
004 Cairnes-Domestic Well 10:10	3.0	0.25

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Summary of Groundwater Monitoring Well Analysis Cemex

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Lab No.	Date	TIME	pH	Total Alkalinity as $CaCO_3$ (mg/l)	OH as $CaCO_3$ (mg/l)	CO3 as $CaCO_3$ (mg/l)	HCO3 as CaCO3 (mg/l)	Cl (mg/l)	SO_4 (mg/l)	NO_3-N (mg/l)	NO_3 (mg/l)	TDS (mg/l)	**Ca** (mg/l)	**Mg** (mg/l)	**Na** (mg/l)	**K** (mg/l)	Total Fe (mg/l)
MW - 1																	
85263	5/19/05	11:08 AM	7.0	101	<1	<1	101	17.6	43.5	3.9	17.1	206	33.3	6.4	29.1	2.5	0.9
93772	5/11/06	5:00 PM	7.2	126		<1	126	15.8	<0.2	5.1	22.6	263	45.0	8.5	26.4	3.2	0.2
104616	6/14/07	2:10 PM	7.6	141	<1	<1	141	12.4	37.2	0.4	1.59	248	40.4	7.1	24.0	2.0	1.7
MW - 2																	
85263	5/19/05	12:24 PM	7.9	179		<1	179	24.8	127	15.3	67.7	489	55.3	30.2	60.6	6.1	4.3
93772	5/11/06	4:24 PM	7.8	259		<1	259	20.5	<0.2	11.9	52.5	613	61.8	30.2	48.8	6.3	3.1
104616	6/14/07	1:43 PM	8.1	228	<1	<1	228	21.7	107	14.8	65.5	515	60.4	29.1	49.0	5.6	15.4
MW - 3																	
85263	5/19/05	12:48 PM	7.5	293		<1	293	46.1	143	10.0	44.3	652	92.3	25.4	90.2	5.0	0.5
93772	5/11/06	3:00 PM	7.3	285		<1	285	33.5	<0.2	13.5	59.8	660	90	25.2	76.7	6.3	0.3
104616	6/14/07	12:45 PM	7.7	109	<1	<1	109	13.4	27.1	1.5	6.78	205	30.4	8.6	17.0	1.6	0.5
MW - 4																	
85263	5/19/05	1:20 PM	7.6	233		<1	233	34.9	108	18.8	83.5	559	81.2	21.5	74.0	3.5	2.4
93772	5/11/06	2:05 PM	7.5	286		<1	286	32.8	<0.2	17.9	79.1	605	78.2	21.7	65.9	4.6	1.6
104616	6/14/07	12:20 PM	8.0	234	<1	<1	234	38.7	79.4	12.3	54.6	512	59.5	19.3	63.0	2.8	2.0

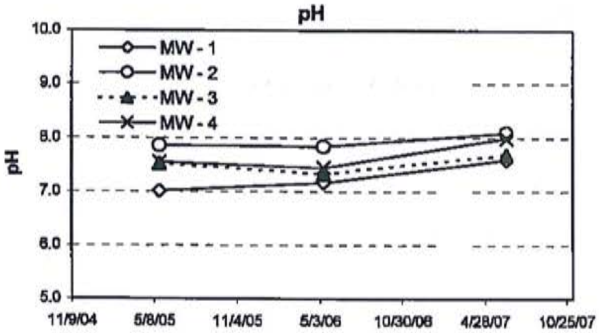
Dissolved metals (**bolded**) were filtered.

F:\Client C\CEMEX #13588\2007\[MW Analysis Summary 05-07.xls]Table

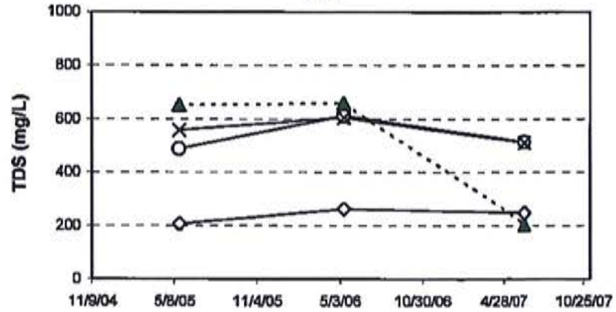
DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Summary of Groundwater Monitoring Well Analysis Cemex

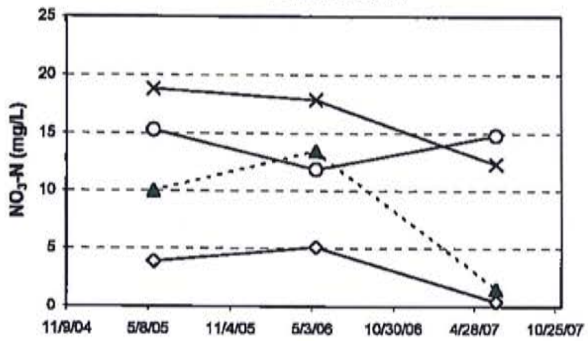
pH



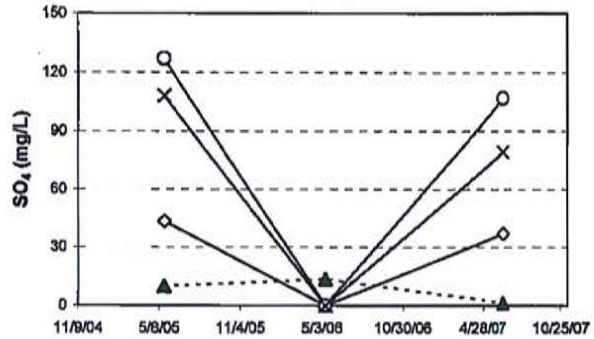
TDS



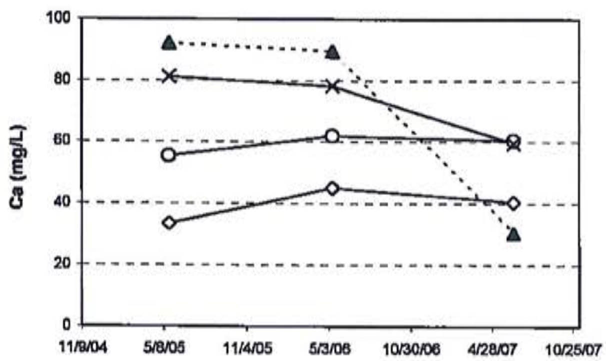
Nitrate Nitrogen (NO_3-N)



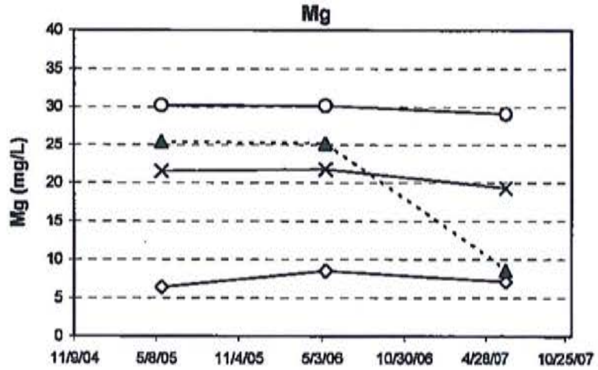
Sulfate (SO_4)



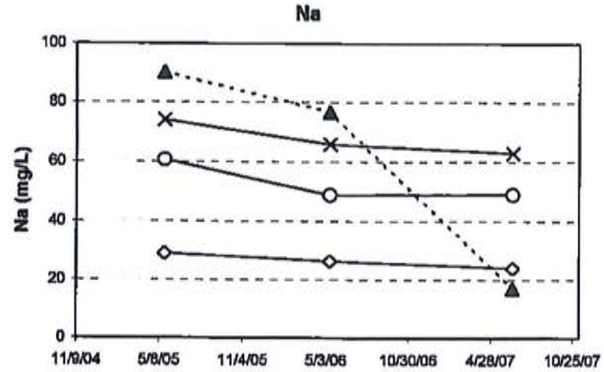
Ca



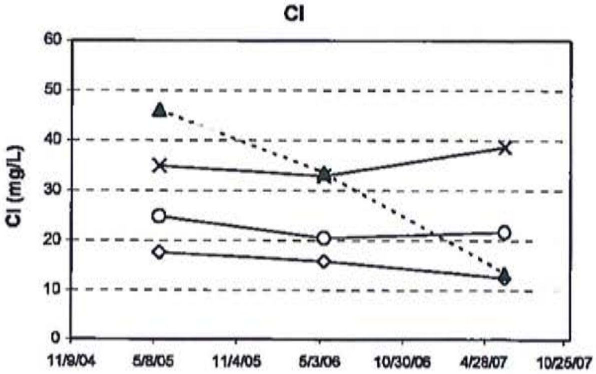
Mg



Na



Cl



DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 104616
Sample Date 6/14/2007
Sample Time
Submitted Date 6/14/2007
Submitted by G Coburn/A Light/Del-Tech
Reported Date 6/29/2007
Location/Project Stillwell Proj-GW Monitoring
Copy To
Fax
e-mail

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL—>						250	250	10	45	500					0.30
MDL—>			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.004
RL—>	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.01
SM—>	4500H B	2320 B	2320 B	2320 B	2320 B	4500Cl C	4500SO4 E	4500NO3 E	4500NO3 E	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA—>						300	300	300	300		200.7	200.7	200.7	200.7	
Analysis Date:	6/15/2007	6/16/2007	6/16/2007	6/16/2007	6/16/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/15/2007	6/25/2007
001 MW 1 14:10	7.6	141	<1	<1	141	12.4	37.2	0.4	1.59	248	40.4	7.1	24	2.0	1.69
002 MW 2 13:43	8.1	228	<1	<1	228	21.7	107	14.8	65.5	515	60.4	29.1	49	5.6	15.4
003 MW 3 12:45	7.7	109	<1	<1	109	13.4	27.1	1.5	6.78	205	30.4	8.6	17	1.6	0.46
004 MW 4 12:20	8.0	234	<1	<1	234	38.7	79.4	12.3	54.6	512	59.5	19.3	63	2.8	1.97

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE®
Laboratory, Inc.
Chemists and Consultants

September 23, 2008

Cemex

Lab # : 120659,
Dear Gerald,

Enclosed are the results for the annual monitoring well water samples recently collected on September 9, 2008

203

Respectfully,

Ben Nydam

Ben Nydam
Certified Crop Advisor # 22552
Dellavalle Laboratory, Inc.

[redacted]

Invoicing:

4 - Monitoring well: purging, monitoring of field parameters (PH, EC, DO), logging, data collection, water sampling @ [redacted] = $[redacted]

4 - Water sample analysis for pH, NO3, SO4, TDS, CO3, HCO3, Cl, Ca, Mg, Na, TK, Total Alkalinity Total Iron, Ferrous Iron @ [redacted] = [redacted]

[redacted]

DELLAVALLE Laboratory, Inc.
Chemists and Consultants
1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120659
Sample Date 9/9/2008
Sample Time
Submitted Date 9/9/2008
Submitted by Gerald Coburn-Plant Manager
Reported Date 9/23/2008
Location/Project Stillwell Project - Domestic Well Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Total Ca	Total Mg	Total Na
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500			
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	1.5
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B
EPA-->						300	300	300	300				
Analysis Date:	9/9/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/10/2008	9/9/2008	9/11/2008	9/11/2008	9/11/2008
001 Weller - Domestic Well 08:25	7.5	80	<1	<1	80	7.9	23.0	2.8	12.3	148	23.8	4.1	11
002 Stillwell - Domestic Well 08:10	7.2	180	<1	<1	180	18.8	49.7	17.8	78.8	432	65.6	23.0	32
003 Morton - Domestic Well 07:55	7.4	253	<1	<1	253	39.2	95.4	16.9	74.7	592	73.4	20.9	51
004 Caines - Domestic Well 07:45	6.9	222	<1	<1	222	23.8	74.9	26.5	118	548	78.3	21.6	47

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ______________________

ELAP Certification #1595

Wetlab Results

ARF: 56872

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: ANGELA SIMPSON

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AX83187	-Client Sample ID: 120142-1 MW1		-Sample Collection Date: 08/28/08		Project: 120142	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	08/29/08	08/29/08
APPL ID: AX83188	-Client Sample ID: 120142-2 MW2		-Sample Collection Date: 08/28/08		Project: 120142	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	08/29/08	08/29/08
APPL ID: AX83189	-Client Sample ID: 120142-3 MW3		-Sample Collection Date: 08/28/08		Project: 120142	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	08/29/08	08/29/08
APPL ID: AX83190	-Client Sample ID: 120142-4 MW4		-Sample Collection Date: 08/28/08		Project: 120142	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	08/29/08	08/29/08

CEMEX - Lemon Cove Plant #133 - Gerald Coburn - #13588/08
Project: Stillwell Project - Domestic Well Monitoring

Wetlab Results

ARF: 56935

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: ANGELA SIMPSON

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AX83500	-Client Sample ID: 120659-1 WELLER DOMESTIC		-Sample Collection Date. 09/09/08		Project: 120659	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/09/08	09/09/08
APPL ID: AX83501	-Client Sample ID: 120659-2 STILLWELL DOMESTI		-Sample Collection Date: 09/09/08		Project: 120659	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/09/08	09/09/08
APPL ID: AX83502	-Client Sample ID: 120659-3 MORTON DOMESTIC		-Sample Collection Date: 09/09/08		Project: 120659	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/09/08	09/09/08
APPL ID: AX83503	-Client Sample ID: 120659-4 CAINES DOMESTIC W		-Sample Collection Date: 09/09/08		Project: 120659	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/09/08	09/09/08

These results are preliminary and represent information available on 9/10/08 at 9:48am

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 120659
Sample Date 9/9/2008
Sample Time
Submitted Date 9/9/2008
Submitted by Gerald Coburn-Plant Manager
Reported Date 9/23/2008
Location/Project Stillwell Project - Domestic Well Monitoring
Copy To
Fax
e-mail geraldw.coburn@cemex.com

	Total Fe	Total K	Dissolved *Fe
	mg/L	mg/L	
MCL-->	0.30		
MDL-->	0.004	0.3	
RL-->	0.01	0.5	
SM-->	3120 B	3120 B	
EPA-->			
Analysis Date:	9/11/2008	9/11/2008	Send Out
001 Weller - Domestic Well 08:25	1.33	1.9	*
002 Stillwell - Domestic Well 08:10	2.96	3.4	*
003 Morton - Domestic Well 07:55	0.22	3.8	*
004 Caines - Domestic Well 07:45	0.15	2.8	*

Dellavalle Laboratory, Inc.
Chemists and Consultants
1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No.	120142
Sample Date	8/28/2008
Sample Time	
Submitted Date	8/28/2008
Submitted by	Gerald Coburn-Plant Mgr
Reported Date	9/16/2008
Location/Project	Stillwell Proj-GW Monitoring
Copy To	
Fax	
e-mail	geraldw.coburn@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500					0.30
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.004
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.01
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA-->						300	300	300	300						
Analysis Date:	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	8/29/2008	9/4/2008	9/4/2008	9/4/2008	9/4/2008	9/4/2008
001 MW-1 14:47	6.8	89	<1	<1	89	3.1	7.1	0.5	2.03	596	25.4	4.3	10	2.2	2.42
002 MW-2 14:21	7.9	192	<1	<1	192	20.6	99.6	5.5	24.3	375	37.2	29.8	52	8.1	2.91
003 MW-3 13:30	7.2	111	<1	<1	111	0.8	1.6	<0.1	<0.45	132	23.3	6.4	12	2.0	0.42
004 MW-4 13:00	7.5	222	<1	<1	222	355	501	68.7	304	580	85.0	24.2	78	4.2	2.04

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________________

ELAP Certification #1595

CEMEX Construction Materials LP #13588/08

Wetlab Results

ARF: 59643

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Peggy Miller

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY02374 -Client Sample ID: 134963-1 MW-1			-Sample Collection Date: 08/31/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/01/09	09/01/09
APPL ID: AY02375 -Client Sample ID: 134963-2 MW-2			-Sample Collection Date: 08/31/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/01/09	09/01/09
APPL ID: AY02376 -Client Sample ID: 134963-3 MW-3			-Sample Collection Date: 08/31/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/01/09	09/01/09
APPL ID: AY02377 -Client Sample ID: 134963-4 MW-4			-Sample Collection Date: 08/31/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/01/09	09/01/09

Wetlab Results

ARF: 59765

Cemex #13588/08
Proj: Stillwell Domestic Well

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Peggy Miller

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY03302	-Client Sample ID: 135564-1		-Sample Collection Date: 09/15/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/15/09	09/15/09
APPL ID: AY03303	-Client Sample ID: 135564-2		-Sample Collection Date: 09/15/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/15/09	09/15/09
APPL ID: AY03304	-Client Sample ID: 135564-3		-Sample Collection Date: 09/15/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/15/09	09/15/09
APPL ID: AY03305	-Client Sample ID: 135564-4		-Sample Collection Date: 09/15/09		Project: Filter Station	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	09/15/09	09/15/09

Printed: 09/15/09 3:11:41 PM

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 135904
Sample Date 9/22/2009
Sample Time
Submitted Date 9/23/2009
Submitted by
Reported Date 10/5/2009
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO4	NO3-N	NO3	Dissolved Solids TDS	Ca	Mg	Na	K	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10	45	500					0.00
MDL-->			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.1	0.1	0.2	0.3	0.281
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.1	0.1	1	0.5	0.5
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA-->						300	300	300	300		0.0	0.0	0.0	0.0	
Analysis Date:	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/23/2009	9/25/2009	9/24/2009	9/24/2009	9/24/2009	9/24/2009	9/29/2009
001 MW 1 14:38	6.4	165	<1	<1	165	17.0	25.0	0.8	3.40	307	43.6	10.1	26	6.0	1.52
002 MW 2 13:56	7.6	165	<1	<1	165	20.5	106	0.6	2.61	360	22.8	27.4	52	7.8	5.93
003 MW 3 13:10	6.4	98	<1	<1	98	13.7	19.7	0.4	1.76	195	26.7	6.9	16	3.3	0.56
004 MW 4 12:20	6.9	241	<1	<1	241	76.8	90.8	13.2	58.6	620	79.1	26.7	81	5.2	2.57

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals **(bolded)** were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________________

ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 135564
Sample Date 9/15/2009
Sample Time
Submitted Date 9/15/2009
Submitted by
Reported Date 9/28/2009
Location/Project Stillwell Domestic Wells
Copy To
Fax
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as CaCO3	OH as CaCO3	CO3 as CaCO3	HCO3 as CaCO3	Cl	SO4	NO3-N	NO3	Dissolved Solids TDS	Total Ca	Total Mg	Total Na	Total Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL—>						250	250	10	45	500				0.00
MDL—>			1	0.9	3	0.03	0.03	0.01	0.0443	10	0.4	0.1	0.4	0.281
RL—>	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10	0.5	0.1	1	0.5
SM—>	4500H B	2320 B	2320 B	2320 B	2320 B			4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B
EPA—>						300	300	300	300					
Analysis Date:	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/16/2009	9/17/2009	9/17/2009	9/17/2009	9/17/2009	9/17/2009
001 Weller 10:30	6.5	129	<1	<1	129	12.6	49.3	6.4	28.5	300	37.5	12.8	24	0.24
002 Stillwell 10:20	6.7	179	<1	<1	179	22.5	59.0	19.4	85.8	477	60.9	21.6	29	0.08
003 Morton 10:10	6.9	242	<1	<1	242	34.4	87.0	10.6	47.2	557	66.9	19.2	55	0.11
004 Caimes 10:00	6.9	196	<1	<1	196	17.1	67.7	25.2	112	540	63.4	17.8	48	0.05

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________________

ELAP Certification #1595

Dellavalle Laboratory, Inc.
Chemists and Consultants
1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-8129

Report of Water Analysis

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 135564
Sample Date 9/15/2009
Sample Time
Submitted Date 9/15/2009
Submitted by Gerald Coburn
Reported Date 9/28/2009
Location/Project Stillwell Domestic Wells
Copy To
Fax
e-mail pete.locastro@cemex.com

	Total K mg/L	*Ferrous Fe
MCL—>		
MDL—>	0.2	
RL—>	0.5	
SM—>	3120 B	
EPA—>		
Analysis Date:	9/17/2009	Send Out
001 Weller 10:30	3.6	*
002 Stillwell 10:20	3.7	*
003 Morton 10:10	5.0	*
004 Cairnes 10:00	3.1	*

Wetlab Results

ARF: 61932

Cemex #13588/58
Proj: Stillwell Proj - GW Monitoring

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY17210	-Client Sample ID: 144382-1 MW1		-Sample Collection Date: 06/23/10		Project: STILLWELL PROJ.-GW	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	06/23/10	06/23/10
APPL ID: AY17211	-Client Sample ID: 144382-2 MW2		-Sample Collection Date: 06/23/10		Project: STILLWELL PROJ.-GW	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	06/23/10	06/23/10
APPL ID: AY17212	-Client Sample ID: 144382-3 MW3		-Sample Collection Date: 06/23/10		Project: STILLWELL PROJ.-GW	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	06/23/10	06/23/10
APPL ID: AY17213	-Client Sample ID: 144382-4 MW4		-Sample Collection Date: 06/23/10		Project: STILLWELL PROJ.-GW	
SM3500FeB	Ferrous Iron	Not detected	1.0	mg/L	06/23/10	06/23/10

Printed: 06/29/10 10:07:27 AM

Report of Water Analysis

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 144382
Sample Date 6/23/2010
Sample Time
Submitted Date 6/23/2010
Submitted by Pete Locastro
Reported Date 7/8/2010
Location/Project Stillwell Project - GW Monitoring
Copy To
Fax
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO3 as $CaCO_3$	HCO3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	**Ca**	**Mg**	**Na**	**K**	Total Fe	*Ferous Fe
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL-->						250	250	10.2	45.0	500					0.3	
MDL-->			1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.28	
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10.0	0.1	0.1	1.0	0.5	0.5	
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	SM 4500-Cl	EM 4500-SO4	4500NO3 F	4500NO3 F	2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA-->						300	300	300	300							
Analysis Date:	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/28/2010	6/28/2010	6/28/2010	6/28/2010	7/13/2010	Send Out
001 MW 1 @ 10:25	7.2	134	<1	<1	134	18.9	34.6	0.4	1.69	257	42.0	10.4	23	3.3	0.74	*
002 MW 2 @ 09:47	8.2	154	<1	<1	154	21.6	94.6	0.8	3.58	340	15.9	26.4	55	8.7	1.78	*
003 MW 3 @ 09:03	7.1	112	<1	<1	112	18.4	29.0	0.6	2.75	220	35.4	9.1	17	2.4	0.36	*
004 MW 4 @ 08:40	7.2	272	<1	<1	272	205	126	16.9	74.9	910	132	38.7	132	5.6	1.79	*

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ______________________

ELAP Certification #1595

Wetlab Results

Cemex #13588/08
Proj: Stillwell Domestic Well

ARF: 63597

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY29764	-Client Sample ID: 152347-1		-Sample Collection Date: 01/10/11		Project: STILL WELL DOMESTI	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	01/10/11	01/10/11
APPL ID: AY29765	-Client Sample ID: 152347-2		-Sample Collection Date: 01/10/11		Project: STILL WELL DOMESTI	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	01/10/11	01/10/11
APPL ID: AY29766	-Client Sample ID: 152347-3		-Sample Collection Date: 01/10/11		Project: STILL WELL DOMESTI	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	01/10/11	01/10/11
APPL ID: AY29767	-Client Sample ID: 152347-4		-Sample Collection Date: 01/10/11		Project: STILL WELL DOMESTI	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	01/10/11	01/10/11

Printed: 01/11/11 8:36:49 AM

Wetlab Results

ARF: 65082

Cemex Construction #13588/08
Proj: Stillwell Project-DW Monitoring

APPI Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY41173	-Client Sample ID: 159705-1 MW-1		-Sample Collection Date: 07/11/11		Project: STILLWATER PROJECT	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	07/12/11	07/12/11
APPL ID: AY41174	-Client Sample ID: 159705-2 MW-2		-Sample Collection Date: 07/11/11		Project: STILLWATER PROJECT	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	07/12/11	07/12/11
APPL ID: AY41175	-Client Sample ID: 159705-3 MW-3		-Sample Collection Date: 07/11/11		Project: STILLWATER PROJECT	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	07/12/11	07/12/11
APPL ID: AY41176	-Client Sample ID: 159705-4 MW-4		-Sample Collection Date: 07/11/11		Project: STILLWATER PROJECT	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	07/12/11	07/12/11

Printed: 07/13/11 9:15:00 AM

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 159705
Sample Date 7/11/2011
Sample Time
Submitted Date 7/12/2011
Submitted by Pete Locastro
Reported Date 8/1/2011
Location/Project Stillwell Project-Domestic Well Monitoring
Copy To
Fax (925) 426-2226
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO3 as $CaCO_3$	HCO3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10.2	45.0	500			
MDL-->			1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10.0	0.1	0.1	1.0
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	SM 4500-Cl E	M 4500-SO4	Lat. 10.107.05.1.A	Lat. 10.107.05.1.A	2540 C	3120 B	3120 B	3120 B
EPA-->						300	300	300	300				
Analysis Date:	7/13/2011	7/13/2011	7/13/2011	7/13/2011	7/13/2011	7/19/2011	7/19/2011	7/19/2011	7/19/2011	7/22/2011	7/13/2011	7/13/2011	7/13/2011
001 MW-1 @ 17:00	7.2	145	<1	<1	145	22.9	48.8	0.6	2.83	320	50.4	12.1	28
002 MW-2 @ 16:39	7.9	158	<1	<1	158	18.9	89.4	1.9	8.59	440	22.4	28.6	51
003 MW-3 @ 16:14	7.2	530	<1	<1	530	217	124	18.0	79.5	1190	237	87.8	70
004 MW-4 @ 15:55	7.4	233	<1	<1	233	92.2	90.4	15.2	67.4	687	74.6	27.1	107

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; **RL** = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ____________________

ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 159705
Sample Date 7/11/2011
Sample Time
Submitted Date 7/12/2011
Submitted by Pete Locastro
Reported Date 8/1/2011
Location/Project Stillwell Project-Domestic Well Monitoring
Copy To
Fax (925) 426-2226
e-mail pete.locastro@cemex.com

	K	Total Fe	*Ferous Fe
	mg/L	mg/L	
MCL-->		0.3	
MDL-->	0.3	0.004	
RL-->	0.5	0.01	
SM-->	3120 B	3120 B	
EPA-->			
Analysis Date:	7/13/2011	7/15/2011	Send Out
001 MW-1 @ 17:00	3.5	0.11	*
002 MW-2 @ 16:39	7.2	2.02	*
003 MW-3 @ 16:14	4.6	1.05	*
004 MW-4 @ 15:55	5.3	1.99	*

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 152347
Sample Date 1/10/2011
Sample Time
Submitted Date 1/10/2011
Submitted by Pete Locastro
Reported Date 1/26/2011
Location/Project Stillwell Domestic Wells
Copy To
Fax
e-mail pete.locastro@cemex.com

	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO3 as $CaCO_3$	HCO3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na
	unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->						250	250	10.2	45.0	500			
MDL-->			1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15
RL-->	1.0 to 14.0	10	1	1.0	5	0.1	0.2	0.1	0.45	10.0	0.1	0.1	1.0
SM-->	4500H B	2320 B	2320 B	2320 B	2320 B	SM 4500-Cl E	M 4500-SO4	Lat. 10.107.05.1.A	Lat. 10.107.05.1.A	2540 C	3120 B	3120 B	3120 B
EPA-->						300	300	300	300				
Analysis Date:	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/12/2011	1/12/2011	1/11/2011	1/25/2011	1/18/2011	1/12/2011	1/12/2011	1/12/2011
001 Weller 12:40	7.3	54	<1	<1	54	1.7	1.6	<0.1	<0.45	135	6.0	5.1	11
002 Stillwell 12:58	7.3	54	<1	<1	54	2.0	1.5	<0.1	<0.45	135	5.9	5.0	11
003 Morton 11:39	7.6	208	<1	<1	208	33.4	75.6	11.0	48.9	505	68.3	19.8	58
004 Cairnes 11:30	7.4	181	<1	<1	181	17.2	55.3	23.9	106	515	65.6	17.6	53

*See external laboratory documentation

MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)

MDL = Method Detection Limit; RL = Reporting Limit

SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995

EPA = Environmental Protection Agency methods used unless otherwise indicated.

Dissolved metals (**bolded**) were filtered.

MBAS molecular weight = 340 grams.

QA/QC available upon request.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 152347
Sample Date 1/10/2011
Sample Time
Submitted Date 1/10/2011
Submitted by Pete Locastro
Reported Date 1/26/2011
Location/Project Stillwell Domestic Wells
Copy To
Fax
e-mail pete.locastro@cemex.com

	K	Total Fe	*Ferous Fe
	mg/L	mg/L	
MCL-->		0.3	
MDL-->	0.3	0.004	
RL-->	0.5	0.01	
SM-->	3120 B	3120 B	
EPA-->			
Analysis Date:	1/12/2011	1/12/2011	Send Out
001 Weller 12:40	1.3	<0.10	*
002 Stillwell 12:58	1.2	<0.10	*
003 Morton 11:39	3.5	<0.10	*
004 Cairnes 11:30	2.4	<0.10	*

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Bacteriological Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Lab No.	152342
Sample Date	1/10/2011
Sample Time	11:39
Sampler	P. Proctor
Submitted Date	1/10/2011
Submitted by	Gerald Coburn
Reported Date	1/11/2011
Location/Project	Routine
Copy To	
Fax	
email	pete.locastro@cemex.com

Material Submitted:

	Date Started	Time Started	Rec'd Temp °C	Total MPN Coliform per 100 ml	MPN E-Coli per 100 ml	Residual Chlorine mg/L
RL—>				< 1	< 1	
SM—>				9223	9223	Field test
Analysis Date:	1/11/2011	1/11/2011	1/11/2011	1/11/2011	1/11/2011	
001 Morton	1/10/2011	16:00	5.9	<1	<1	

ND = None Detected
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Records retained for 5 yrs.
mg/L = ppm

Approved By: ______________________
ELAP Certification #1595

Cemex #13588/08
Proj: Stillwell Proj GW Monitoring

Wetlab Results

ARF: 67538

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY59312 -Client Sample ID: 169985-1			-Sample Collection Date: 04/18/12			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/19/12	04/19/12
APPL ID: AY59313 -Client Sample ID: 169985-2			-Sample Collection Date: 04/18/12			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/19/12	04/19/12
APPL ID: AY59314 -Client Sample ID: 169985-3			-Sample Collection Date: 04/18/12			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/19/12	04/19/12
APPL ID: AY59315 -Client Sample ID: 169985-4			-Sample Collection Date: 04/18/12			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/19/12	04/19/12

Printed: 05/07/12 3:50:40 PM

Cemex #13588/08
Proj: Stillwell Domestic Well

Wetlab Results

ARF: 67711

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY60853	-Client Sample ID: 171014-1		-Sample Collection Date: 05/09/12		Project: Stillwell Domestic Well	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	05/10/12	05/10/12
APPL ID: AY60854	-Client Sample ID: 171014-2		-Sample Collection Date: 05/09/12		Project: Stillwell Domestic Well	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	05/10/12	05/10/12
APPL ID: AY60855	-Client Sample ID: 171014-3		-Sample Collection Date: 05/09/12		Project: Stillwell Domestic Well	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	05/10/12	05/10/12
APPL ID: AY60856	-Client Sample ID: 171014-4		-Sample Collection Date: 05/09/12		Project: Stillwell Domestic Well	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	05/10/12	05/10/12

Printed: 05/30/12 11:33:25 AM

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 171014
Sampler N. Olson
Submitted Date 05/09/12
Submitted by Ramon Neilson
Reported Date 05/29/12
Location/Project Stillwell Domestic Wells
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->								250	250	10.2	45.0	500					0.3
MDL-->					1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004
RL-->			1.0 to 14.0	10	1	1.0	5	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1
SM-->			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B	3120 B
EPA-->								300.0	300.0	300.0	300.0						
Analysis Date:			5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/21/2012	5/14/2012	5/14/2012	5/14/2012	5/14/2012	5/14/2012
Analysis Time:			11:03	11:03	11:03	11:03	11:03	17:58	17:58	17:58	17:58	4:00	12:19	12:19	12:19	12:19	15:58
001 Weller	05/09/12	10:00	6.8	133	<1	<1	133	16.2	38.3	6.9	30.6	1030	36.2	15.8	24	4.1	<0.10
002 Stillwell	05/09/12	9:25	6.8	171	<1	<1	171	22.4	55.6	21.6	95.6	212	62.5	23.6	32	2.5	<0.10
003 Morton	05/09/12	10:50	7.1	214	<1	<1	214	19.5	66.9	19.6	86.9	175	67.0	20.0	56	3.6	0.15
004 Cairnes	05/09/12	10:30	7.0	201	<1	<1	201	17.0	63.4	26.7	118	580	75.7	22.1	51	2.6	<0.10

*See external laboratory documentation
pH analyzed ouside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals (**bolded**) were filtered.
QA/QC available upon request.

Approved By: ______________________

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

		Date Sampled	Time Sampled
	MCL—>		
	MDL—>		
	RL—>		
	SM—>		
	EPA—>		
	Analysis Date:		
	Analysis Time:		
001	Weller	05/09/12	10:00
002	Stillwell	05/09/12	9:25
003	Morton	05/09/12	10:50
004	Calmes	05/09/12	10:30

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Lab No. 169985
Sampler Del-Tech/Ashley Light
Submitted Date 04/19/12
Submitted by Ramon Neilson
Reported Date 5/14/12
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL-->								250	250	10.2	45.0	500				
MDL-->					1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3
RL-->			1.0 to 14.0	10	1	1.0	5	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5
SM-->			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B
EPA-->								300.0	300.0	300.0	300.0					
Analysis Date:			4/19/2012	4/19/2012	4/19/2012	4/19/2012	4/19/2012	4/18/2012	4/18/2012	4/18/2012	4/18/2012	5/9/2012	5/1/2012	5/1/2012	5/1/2012	5/1/2012
Analysis Time:												12:30	10:15	10:15	10:15	10:15
001 MW 1	04/18/12	18:25	6.9	179	<1	<1	179	26.0	52.4	0.9	4.00	363	62.2	15.2	34	4.1
002 MW 2	04/18/12	18:05	7.5	162	<1	<1	162	22.7	87.7	5.3	23.5	373	30.7	27.6	54	6.5
003 MW 3	04/18/12	17:39	6.8	161	<1	<1	161	29.8	49.8	2.7	11.9	343	56.1	14.7	34	3.3
004 MW 4	04/18/12	17:17	8.0	259	<1	<1	259	63.3	81.8	15.2	67.3	620	83.8	25.6	86	4.9

*See external laboratory documentation
pH analyzed ouside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals (**bolded**) were filtered.
QA/QC available upon request.

Approved By: ____________________

Dellavalle Laboratory, Inc.
Chemists and Consultants
1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Report of Water Analysis

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 169985
Sampler Del-Tech/Ashley Light
Submitted Date 04/19/12
Submitted by Ramon Neilson
Reported Date 5/14/12
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	Total Fe mg/L	*Ferrous Fe
MCL-->			0.3	
MDL-->			0.004	
RL-->			0.1	
SM-->			3120 B	
EPA-->				
Analysis Date:			5/1/2012	Send Out
Analysis Time:			13:26	
001 MW 1	04/18/12	18:25	2.14	*
002 MW 2	04/18/12	18:05	1.02	*
003 MW 3	04/18/12	17:39	<0.10	*
004 MW 4	04/18/12	17:17	0.66	*

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Lab No. 169985
Sampler Del-Tech/Ashley Light
Submitted Date 04/19/12
Submitted by Ramon Neilson
Reported Date 5/14/12
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL--->								250	250	10.2	45.0	500				
MDL--->					1	0.9	3	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3
RL--->			1.0 to 14.0	10	1	1.0	5	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5
SM--->			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B
EPA--->								300.0	300.0	300.0	300.0					
Analysis Date:			4/19/2012	4/19/2012	4/19/2012	4/19/2012	4/19/2012	4/18/2012	4/18/2012	4/18/2012	4/18/2012	5/9/2012	5/1/2012	5/1/2012	5/1/2012	5/1/2012
Analysis Time:												12:30	10:15	10:15	10:15	10:15

ELAP Certification #1595

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

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Cemex Construction Materials LP
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Material Submitted: Water

Lab No. 169985
Sampler Del-Tech/Ashley Light
Submitted Date 04/19/12
Submitted by Ramon Neilson
Reported Date 5/14/12
Location/Project Stillwell Project-GW Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	Total Fe mg/L	*Ferrous Fe
MCL-->			0.3	
MDL-->			0.004	
RL-->			0.1	
SM-->			3120 B	
EPA-->				
Analysis Date:			5/1/2012	Send Out
Analysis Time:			13:26	

Cemex #13588/08
Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Wetlab Results

ARF: 70419

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY78543	-Client Sample ID: 185149-1		-Sample Collection Date: 04/08/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/09/13	04/09/13
APPL ID: AY78544	-Client Sample ID: 185149-2		-Sample Collection Date: 04/08/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/09/13	04/09/13
APPL ID: AY78545	-Client Sample ID: 185149-3		-Sample Collection Date: 04/08/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/09/13	04/09/13
APPL ID: AY78546	-Client Sample ID: 185149-4		-Sample Collection Date: 04/08/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/09/13	04/09/13

Printed: 08/08/13 1:28:17 PM

Wetlab Results

ARF: 70959

CEMEX #13588/08
Project: Stillwell Project-
Groundwater Monitoring

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY81824	-Client Sample ID: 189742-1		-Sample Collection Date: 06/12/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	06/13/13	06/13/13
APPL ID: AY81825	-Client Sample ID: 189742-2		-Sample Collection Date: 06/12/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	06/13/13	06/13/13
APPL ID: AY81826	-Client Sample ID: 189742-3		-Sample Collection Date: 06/12/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	06/13/13	06/13/13
APPL ID: AY81827	-Client Sample ID: 189742-4		-Sample Collection Date: 06/12/13			
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	06/13/13	06/13/13

Printed: 07/11/13 2:04:18 PM

Report of Water Analysis

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

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FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 185149
Sampler T. Cox
Submitted Date 4/8/2013
Submitted by Ramon Neilson
Reported Date 4/15/2013
Location/Project Stillwell Domestic Wells
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	**Ca**	**Mg**	**Na**	**K**	Total Fe	*Ferrous Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL—>								250	250	10.0	45.0	500					0.3	
MDL—>					1.00	0.9	3.00	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL—>			1.0 to 14.0	10.0	1.00	1.0	5.00	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM—>			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA—>								300.0	300.0	300.0	300.0							
Analysis Date:			4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	Send Out
Analysis Time:			12:11	12:11	12:11	12:11	12:11	20:06	20:06	20:06	20:06	9:00	9:20	9:20	9:20	9:20	11:16	
001 Weller	4/8/2013	9:41	7.3	130	<1	<1	130	13.5	39.6	7.3	32.2	287	38.2	16.6	25	4.4	0.55	*
002 Stillwell	4/8/2013	9:06	7.1	173	<1	<1	173	18.0	51.7	20.5	90.7	460	68.7	25.8	33	2.8	<0.10	*
003 Morton	4/8/2013	10:05	7.4	232	<1	<1	232	27.0	74.0	17.8	78.8	653	74.4	23.3	58	3.9	<0.10	*
004 Cairnes	4/8/2013	10:18	7.2	194	<1	<1	194	12.8	54.3	23.3	103	473	72.0	21.4	37	2.6	<0.10	*

*See external laboratory documentation
pH analyzed outside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals (**bolded**) were filtered.
QA/QC available upon request.

Approved By: ____________________

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

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Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 185149
Sampler T. Cox
Submitted Date 4/8/2013
Submitted by Ramon Neilson
Reported Date 4/15/2013
Location/Project Stillwell Domestic Wells
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe	*Ferrous Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL-->								250	250	10.0	45.0	500					0.3	
MDL-->					1.00	0.9	3.00	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL-->			1.0 to 14.0	10.0	1.00	1.0	5.00	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM-->			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA-->								300.0	300.0	300.0	300.0							
Analysis Date:			4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/9/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	4/11/2013	Send Out
Analysis Time:			12:11	12:11	12:11	12:11	12:11	20:06	20:06	20:06	20:06	9:00	9:20	9:20	9:20	9:20	11:16	

ELAP Certification #1595

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Lab No. 189742
Sampler Don Light/ Deltech
Submitted Date 6/12/2013
Submitted by Ramon Neilson
Reported Date 6/24/2013
Location/Project Stillwell Project- Groundwater Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4-S	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe	*Ferrous Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL—>							250	83.3	250	10.0	45.0	500					0.3	
MDL—>					0.9	3.00	0.03	0.01	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL—>			1.0 to 14.0	10.0	1.0	5.00	0.1	0.07	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM—>			4500H B	2320 B	2320 B	2320 B						2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA—>							300.0	300.0	300.0	300.0	300.0							
Analysis Date:			6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	Send Out
Analysis Time:			9:10	9:10	9:10	9:10	17:04	17:04	17:04	17:04	17:04	2:51	10:41	10:41	10:41	10:41	13:32	
001 MW-1	6/12/2013	10:50	7.5	175	<1	175	25.5	19.0	57.0	3.0	13.3	497	55.9	13.8	34	3.9	<0.10	*
002 MW-2	6/12/2013	11:27	8.0	202	<1	202	18.8	24.2	72.5	10.0	44.2	570	49.8	27.2	54	6.5	0.94	*
003 MW-3	6/12/2013	11:50	7.1	133	<1	133	28.8	16.9	50.8	0.4	<2.00	313	46.7	11.3	30	3.2	<0.10	*
004 MW-4	6/12/2013	12:20	7.6	245	<1	245	75.4	20.6	61.8	16.9	75.0	870	80.8	23.6	81	4.9	1.51	*

*See external laboratory documentation
pH analyzed outside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals (**bolded**) were filtered.
QA/QC available upon request.

Approved By: ____________________

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Chemists and Consultants

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Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

Lab No. 189742
Sampler Don Light/ Deltech
Submitted Date 6/12/2013
Submitted by Ramon Neilson
Reported Date 6/24/2013
Location/Project Stillwell Project- Groundwater Monitoring
Copy To
Fax (925) 426-2226
e-mail ramon.neilson@cemex.com

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4-S	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe	*Ferrous Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL-->							250	83.3	250	10.0	45.0	500					0.3	
MDL-->					0.9	3.00	0.03	0.01	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL-->			1.0 to 14.0	10.0	1.0	5.00	0.1	0.07	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM-->			4500H B	2320 B	2320 B	2320 B						2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA-->							300.0	300.0	300.0	300.0	300.0							
Analysis Date:			6/18/2013	6/18/2013	6/18/2013	6/18/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	6/19/2013	Send Out
Analysis Time:			9:10	9:10	9:10	9:10	17:04	17:04	17:04	17:04	17:04	2:51	10:41	10:41	10:41	10:41	13:32	

ELAP Certification #1595

Wetlab Results

ARF: 73142

CEMEX #13588/08
Proj: Stillwell
Domestic Wells

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Dellavalle Laboratory, Inc.
1910 W. McKinley Ave. #110
Fresno, CA 93728

Attn: Elisa Sanchez

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AY95133 -Client Sample ID: 201932-1			-Sample Collection Date: 04/14/14		Project: Still Well DW	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/15/14	04/15/14
APPL ID: AY95134 -Client Sample ID: 201932-2			-Sample Collection Date: 04/14/14		Project: Still Well DW	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/15/14	04/15/14
APPL ID: AY95135 -Client Sample ID: 201932-3			-Sample Collection Date: 04/14/14		Project: Still Well DW	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/15/14	04/15/14
APPL ID: AY95136 -Client Sample ID: 201932-4			-Sample Collection Date: 04/14/14		Project: Still Well DW	
SM3500FeB	FERROUS IRON	Not detected	1.0	mg/L	04/15/14	04/15/14

Printed: 04/25/14 1:35:58 PM

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Lab No. 201932
Sampler PFP/JP
Submitted Date 4/14/2014
Requested by Pete Locastro
Reported Date 4/28/2014
Location/Project Stillwell Domestic Wells
Copy To
Fax (925) 426-2226
e-mail pete.locastro/peterh.cotter@cemex.com

Cemex Construction Materials LP
13475 N Friant Rd
Friant CA 93626
13588
08

Material Submitted: Water

	Date Sampled	Time Sampled	pH	Total Alkalinity as $CaCO_3$	OH as $CaCO_3$	CO_3 as $CaCO_3$	HCO_3 as $CaCO_3$	Cl	SO_4	NO_3-N	NO_3	TDS	Ca	Mg	Na	K	Total Fe	*Ferrous Fe
			unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
MCL-->								250	250	10.0	45.0	500					0.3	
MDL-->					1.00	0.9	3.00	0.03	0.03	0.01	0.04	10.0	0.1	0.1	0.15	0.3	0.004	
RL-->			1.0 to 14.0	10.0	1.00	1.0	5.00	0.1	0.5	0.1	2.0	10.0	0.1	0.1	1.0	0.5	0.1	
SM-->			4500H B	2320 B	2320 B	2320 B	2320 B					2540 C	3120 B	3120 B	3120 B	3120 B	3120 B	
EPA-->								300.0	300.0	300.0	300.0							
Analysis Date:			4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/15/2014	4/25/2014	4/17/2014	4/17/2014	4/17/2014	4/17/2014	4/30/2014	Send Out
Analysis Time:			12:01	12:01	12:01	12:01	12:01	17:53	17:53	17:53	17:53	0:00	9:49	9:49	9:49	9:49	13:52	
001 Weller	4/14/14	11:10	7.3	128	<1	<1	128	13.6	41.0	6.9	30.4	363	39.4	16.2	26	4.0	1.62	*
002 Stillwell	4/14/14	10:30	7.5	176	<1	<1	176	17.2	64.2	19.2	85.0	520	66.8	24.1	33	2.2	<0.10	*
003 Morton	4/14/14	10:00	7.6	211	<1	<1	211	16.2	60.2	23.7	105	547	80.6	23.8	55	4.0	0.49	*
004 Cairnes	4/14/14	9:30	7.4	190	<1	<1	190	11.9	53.2	24.0	106	570	72.9	21.2	40	1.8	0.15	*

*See external laboratory documentation
pH analyzed outside of 15 min hold time.
MCL = Maximum Contaminant Level according to the California Domestic Water Quality and Monitoring Regulations (Title 22)
MDL = Method Detection Limit; **RL** = Reporting Limit
SM = Standard Methods for the Examination of Water and Wastewater, 19th ed., 1995
Dissolved metals (**bolded**) were filtered.
QA/QC available upon request.

Approved By:
ELAP Certification #1595