ELLISON, SCHNEIDER & HARRIS L.L.P.

ANNE J. SCHNEIDER
1937-2000

CHRISTOPHER T. ELLISON
JEFFERY D. HARRIS
DOUGLAS K. KERNER
ROBERT E. DONLAN
ANDREW B. BROWN
GREGGORY L. WHEATLAND
CHRISTOPHER M. SANDERS
LYNN M. HAUG
PETER J. KIEL
ELIZABETH P. EWENS

ATTORNEYS AT LAW
2600 CAPITOL AVENUE, SUITE 400
SACRAMENTO, CALIFORNIA 95816
TELEPHONE: (916) 447-2166
FACSIMILE: (916) 447-3512
http://www.eslawfirm.com

BRIAN S. BIERING
JEREMIAH J. GIBSON
CHASE B. KAPPEL
SHANE E. C. McCOIN
SAMANTHA G. POTTENGER

OF COUNSEL
RONALD LIEBERT

March 6, 2013

13 MAR -6 PM 4:49

Ms. Anne L. Olson, P.E.
Senior Water Resources Control Engineer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, No. 200
Rancho Cordova, California 95670

RE: Comments to Proposed CDO, City of Ione WWTF

Dear Ms. Olson,

On behalf of the City of Ione ("Ione" or "City"), please accept and consider these comments to the draft cease and desist order ("CDO") that the Regional Water Quality Control Board ("RWQCB" or "Board") has proposed for adoption at its April 2013 Meeting. For your reference, this letter begins with a short summary of the changes Ione is requesting to the draft CDO as the City believes certain CDO provisions lack a scientific or technical basis. If these reasonable changes are accepted the City will support the adoption of the draft CDO. City staff has enjoyed working with Board staff to date and looks forward to a continued partnership to resolve water quality issues related to Ione's wastewater treatment facility.

The City requests five changes to the draft CDO. In short, these changes are listed here with the rationale for each change described in further detail below.

1. Change the various deadline dates from May to October and remove interim compliance dates that would accelerate the October 30, 2013 compliance deadline in the Board's 2011 CDO;
2. Change date of construction of new Monitoring Well MW2A from April to July 2013 and allow installation of new aerators in conjunction with the rest of the construction work rather than in advance of the overall project certification deadline;
3. Use only two closest monitoring wells (MW2 and MW2A) as compliance wells and develop statistically significant concentration reductions for each compliance well;
4. Use best available science to establish concentration reduction levels of iron and manganese in the local groundwater; and
5. If groundwater concentration triggers require filling the bottom two-feet of pond 5, allow the use of clean soil rather than clay to allow continued percolation of oxygenated water to attenuate local iron and manganese levels.

Regulatory History and Background

The City of Ione understands and appreciates the Regional Board's enforcement history involving the City of Ione. For the past 18 months, however, the City has diligently addressed the RWQCB's concerns as set forth in the 2011 CDO (R5-2011-0019) and relayed through continued discussion with Board staff. While some of the City's recent change in direction was intended to ensure compliance with the RWQCB's enforcement efforts, much of the change in direction was spurred by wholesale change in those City personnel responsible for environmental and regulatory compliance.

Until the last week of January 2013, when the City first learned that the RWQCB was intending to issue a draft CDO to revise or replace the existing 2011 CDO, the City has been diligently working toward compliance with the 2011 CDO. The City's efforts were designed to target compliance with two major provisions of the 2011 CDO. The first requirement is a provision requiring that "[t]he Discharger shall construct facility improvements that will effectively stop the mechanisms that result in mobilization and discharge of iron and manganese...." (Provision 2, R5-2011-0019.) The second requirement establishes a deadline at which point the mobilization of iron and manganese from pond 5 into the local groundwater must end. That requirement provides that "[b]y 30 October 2013, the Discharger shall submit a technical report certifying that (1) the improvements/expansion project has been completed, (2) the facility does not discharge to Sutter Creek in violation of the Clean Water Act, and (3) any groundwater degradation that occurs due to treatment and disposal of wastewater is consistent with State Water Board Resolution 68-16." (Provision 4.c, R5-2011-0019.)

The City's current compliance project is intended to meet the RWQCB's objectives as outlined in the 2011 CDO. Notably, the 2011 CDO did not require remediation of groundwater nor did it impose concentration targets for iron and manganese levels in the local groundwater. The City is on schedule to construct, by 30 October 2013, facility improvements that will effectively stop the mechanisms that result in the mobilization and discharge of iron and manganese. There is no scientific evidence that the City was discharging effluent or degraded groundwater to Sutter Creek in violation of the Clean Water Act. As a result, the City will be in compliance with State Board Resolution 68-16 and the 2011 CDO by 30 October 2013.

In summary, the City's improvements eliminate the cause of anoxic conditions at the bottom of pond 5 and drastically reduce the use of the ponds for percolation by reclaiming treated wastewater for irrigation purposes during the growing season. By avoiding discharge to the ponds during the dry irrigation season the City will be able to remove the sludge at the bottom of pond 5 in year one and in future years will allow the City to maintain the percolation ponds and prevent the recurrence of a sludge layer. The City will remove about eleven tons of organic sludge from the bottom of pond 5 along with any contaminated anoxic soil. The eleven tons of organic sludge creates an oxygen sink where the effluent mobilizes iron and manganese into the surrounding groundwater.

Explanation of CDO Changes Sought by the City of Ione

1. *Change Various Dates within the CDO.*

The 2011 CDO and the draft CDO establish a deadline of 30 October 2013 for project completion and certification. Even Board staff believes that deadline is an aggressive schedule that will be difficult to achieve. First, the draft CDO changes the current project compliance and certification deadline from October 30, 2013 (as outlined in the 2011 CDO) to October 1, 2013. The City asks that the October 30, 2013 deadline for project certification be retained. The draft CDO also accelerates the October 30, 2013 compliance deadline by creating two new interim deadlines: (1) a deadline for installation of a new monitoring well (further discussed below); and (2) a deadline for installation of increased aeration capacity.

Further, the draft CDO proposes assessment deadlines that lack any scientific basis and are inconsistent with the proposed CDO's own findings. For instance, the draft CDO requires an assessment of the facility upgrades by May 1, 2014 (compliance timeline and tasks, page 12). Draft CDO Finding No. 25(h) acknowledges that the City expects to see statistically significant improvements at the downgradient wells within one year of the proposed upgrades, which comports with the technical assessment provided on behalf of the City by Dr. Steve Deverel of Hydrofocus – "Measuring Statistically Significant Manganese and Iron Concentration Changes in Monitoring Wells, City of Ione, WWTF" ("Hydrofocus Report"). Since the earliest timeframe that statistically significant changes will be seen in groundwater concentrations is at least one year, we request that the assessment of facility upgrades be due one year after October 30, 2013, not May 1, 2014. The City asks that all other deadlines in the draft CDO that tier from that first deadline be extended by a similar timeframe to allow sufficient time to evaluate the facility upgrades.

2. *Change date of Construction of Monitoring Well MW2A from April to July 2013 and Allow Installation of New Aeration Capacity during Project Construction.*

As noted above, the acceleration of one of the compliance deadlines from October 30, 2013 to May 2013 includes the installation of new monitoring well MW2A. From a procedural standpoint, the City has no objections to accelerating the timeframe for installation of the new monitoring well. From a practical standpoint, however, the location of the new well is proposed to offer the best opportunity to assess the effectiveness of the City's facility improvements, it is located in an area that will see intensive construction of pipelines through the area and will see extensive vehicular traffic as the City's contractor constructs the project. The City requests, therefore, that the City be allowed to install the new monitoring well in July, rather than April 2013 to avoid the destruction or damage of the newly installed well during construction activities.

Similarly, because the City is using a low-bid contracting process, the City requests that the compliance deadline for installation of new aeration capacity as proposed in the draft CDO's provision 7 be extended from June 2013 to 1 October 2013 and that the report regarding installation of the additional aeration capacity be included with the overall project certification

report. Further, the City requests that the increased aeration capacity proposed in the draft CDO be revised to comport with the additional aeration capacity as proposed by the City in its Report of Waste Discharge.

3. *Use only the Two Closest Monitoring Wells (MW2 and MW2A) for Compliance Wells to Measure Project Success*

The draft CDO proposes to use four wells as compliance wells (MW-2, 2A, 3 and 3A). Monitoring wells MW-2 and proposed well MW-2A are the closest in proximity to pond 5 and are the best wells from which to detect the efficacy of the proposed improvements. Even so, based on the best available technical calculations, these wells may not see a statistically significant improvement within the first year of plant operation solely because of the character of the underlying groundwater basin. The other two wells proposed as compliance wells to assess the efficacy of the project, monitoring wells MW-3 and MW-3A, may not see a statistically significant improvement in groundwater concentrations because of the hydrology of the area and because of the distance from pond 5 to monitoring wells MW-3 and MW-3A, even if the proposed improvements are 100% effective. (Hydrofocus Report at 4.) Since there is no scientific or technical basis for assessing efficacy through wells MW-3 and MW-3A on the timelines sought in the draft CDO, we request that wells MW-3 and MW-3A continue to be monitored as proposed but that only monitoring wells MW-2 and MW-2A be used as "compliance wells" to assess whether the facility improvements have stopped the mobilization of iron and manganese. The City also asks that after several monitoring events in MW-2A, for an opportunity to meet with Board staff to assess whether the predictions made in the Hydrofocus Report as to the characteristics of MW-2A are accurate and whether the hypothesized reductions are reasonable in light of actual data from MW-2A.

4. *Alter the Concentration Reductions Necessary to Demonstrate Project Success*

The draft CDO mandates that all four compliance monitoring wells (MW-2, 2A, 3 and 3A) achieve the same 25% reduction in manganese concentrations in all four wells within six months of certifying the facility improvements and the same 75% reduction in all four wells within 18 months. The draft CDO mandates the same reductions for iron in all of the wells except for MW-3A. Unfortunately, however, there is no scientific or technical basis for an across the board reduction of that percentage in the four compliance wells all of which are at different distances from pond 5. As demonstrated in the enclosed Hydrofocus Report, even if the facility improvements are 100% effective in eliminating further mobilization of iron and manganese into the groundwater, none of the compliance monitoring wells will see a 25% reduction in manganese concentrations within the first year, let alone within the six months currently proposed in the draft CDO. Only one of the three compliance monitoring wells might show a 25% reduction in iron concentrations (MW-3A does not have elevated iron levels) within the first year but this reduction is hypothetical since that reduction would occur in compliance well MW-2A, yet to be constructed.

In prior discussions with Board staff the City had asked that the City be allowed to use a statistically significant assessment of iron and manganese levels in the local groundwater to

determine whether the facility improvements are effective. Board staff seemed reluctant, however, to accept such a statistical analysis and would like to use a numerical standard to avoid future disputes about whether the facility improvements have stopped the mobilization of iron and manganese. As a result, the City has proposed objective compliance ranges based on the assessment of statistically significant improvements taken from the enclosed Hydrofocus Report.

While the City had hoped that reductions in iron and manganese levels in the local groundwater would be more robust, Board staff has informed the City that although groundwater quality is the measuring stick for project effectiveness active groundwater remediation is not contemplated by the draft CDO. Even so, the draft CDO measures the efficacy of proposed facility improvements, designed to "*effectively stop the mechanisms that result in the mobilization and discharge of iron and manganese in violation of State Board Resolution 68-16*" as mandated by the 2011 CDO, by assessing the remediation of local groundwater. Notably, though Board staff believes lining the City's percolation ponds would help remediate iron and manganese concentrations in the shallow groundwater such an improvement would increase the amount of time it would take for natural attenuation of iron and manganese to occur because the natural groundwater would no longer be flushed by well-oxygenated water percolating through City percolation ponds 5-7.

The draft CDO also requires full compliance with the CDO and the WDRs no later than 1 May 2016. While the City, by October 2013, will ensure that its discharges are not causing mobilization of iron and manganese as required by the 2011 CDO, the groundwater impacted by past disposal practices will not be remediated within that timeframe. Had the City been aware that Board staff would, at the eleventh hour, propose to use groundwater remediation as the measurement by which its compliance project would be assessed the City might have proposed different or additional facility improvements. The City might also have proposed additional mechanisms designed to ensure aeration of the local water table which could cause iron and manganese to precipitate out of the groundwater.

5. *If Additional Soil is Needed in the Bottom of Pond 5, that Clay Soil not be Required so as to allow Continued Percolation through Two-feet of Additional Clean Fill*

As a second phase of the project, should aeration, mixing, and removal of the sludge in pond 5 not prove entirely effective, the City's Report of Waste Discharge proposed to add two feet of clean soil, not clay, to the bottom of pond 5 to further increase the distance between the groundwater and the bottom of pond 5. This addition of soil, rather than clay, will still allow the pond to be used as a percolation pond. The addition of soil is intended to reduce the mixing depth and to reduce the influence of groundwater on pond 5 water temperatures, both of which, in conjunction with improved aeration and pond 5 mixing, will help raise oxygen-reduction potential ("ORP") and dissolved oxygen ("DO") values in pond 5. Adding two feet of clean soil will also increase the depth of the vadose zone immediately under pond 5. Pond 5 is several feet deeper than either pond 6 or pond 7 so filling part of pond 5 should encourage pond 5 to behave more like ponds 6 and 7 neither of which exhibit low ORP or DO. If the City is forced to line pond 5 with clay, the project will not have sufficient disposal capacity. (Ione Report of Waste Discharge at 22; Proposed Waste Discharge Requirements Order R5-2013-XXXX Section 50.b.)

Conclusion

The City was not informed that a new CDO would be issued until days before the draft CDO was to be published; the City has submitted two previous rounds of comments and revisions in an attempt to address the numerous factual, scientific, and technical errors in the draft CDO. We have enclosed those communications for your convenience.

The City of Ione is interested in working with Board staff to achieve regulatory compliance and believes that the issues raised in this letter and in its prior letters can be resolved before the April Board hearing.[1] We hope Board staff has the same interest in resolving these matters in advance of the hearing so that valuable public resources can be used to assure the protection of water quality rather than in opposing each other at contested hearings.

Thank you for the opportunity to provide a third round of comments on the draft CDO. Please do not hesitate to contact me directly should you have any questions.

Sincerely,

Christopher M. Sanders

Enclosure

cc: City Manager Ed Pattison (via e-mail only)
City Attorney James Maynard (via e-mail only)
Mary Grace Pawson, GHD (via e-mail only)
Steve Deverel, Hydrofocus (via e-mail only)

[1] The City of Ione initially had comments to the Waste Discharge Requirements also proposed for adoption at the April 2013 RWQCB Meeting. However, after discussions with RWQCB staff, the concerns appear to have been amicably addressed with changes to the WDRs.

CITY OF IONE
P.O. BOX 398
1 E. MAIN STREET
IONE, CA 95640
(209) 274-2412
FAX (209) 274-2830

CITY OF IONE'S EVIDENCE LIST
FOR CDO HEARING: APRIL 11-12, 2013

Date	Document No.	Document
All documents and evidence cited in the Prosecution Team's Evidence List, including the full Administrative Record from the April 18, 2011 Regional Board Hearing (all of which are incorporated by reference).		
03-06-2013	**01**	Cover Letter from City of Ione regarding Proposed CDO
03-06-2013	**02**	Proposed Ione Revisions to Draft 2013 CDO- REDLINE
03-06-2013	**03**	Proposed Ione Revisions to Draft 2013 CDO- CLEAN COPY
04-08-2011	**04**	2011 Cease and Desist Order R5-2011-0019
02-01-2013	**05**	Work Plan Installation of Groundwater Monitor Well MW-2A
03-04-2013	**06**	Projected Statistically Significant Manganese and Iron Concentration Changes in Monitoring Wells, City of Ione, Wastewater Treatment Plant
02-01-2013	**07**	Email from Wendy Wyels to Ione
02-04-2013	**08**	Email from Chris Sanders to Pamela Creedon
02-04-2013	**09**	Letter from Chris Sanders to Pamela Creedon
02-04-2013	**10**	Marked-Up Draft CDO with Requested Changes
02-06-2013	**11**	Email from Pamela Creedon to Chris Sanders
02-26-2013	**12**	Letter from James Maynard to Andrew Altevogt

DOCUMENT # 1

ELLISON, SCHNEIDER & HARRIS L.L.P.

ANNE J. SCHNEIDER
1947-2010

CHRISTOPHER T. ELLISON
JEFFERY D. HARRIS
DOUGLAS K. KERNER
ROBERT E. DONLAN
ANDREW B. BROWN
GREGGORY L. WHEATLAND
CHRISTOPHER M. SANDERS
LYNN M. HAUG
PETER J. KIEL
ELIZABETH P. EWENS

ATTORNEYS AT LAW
2600 CAPITOL AVENUE, SUITE 400
SACRAMENTO, CALIFORNIA 95816
TELEPHONE: (916) 447-2166
FACSIMILE: (916) 447-3512
http://www.eslawfirm.com

BRIAN S. BIERING
JEDEDIAH J. GIBSON
CHASE B. KAPPEL
ISAAC L. C. McCOIN
SAMANTHA G. POTTENGER

OF COUNSEL
RONALD LIEBERT

March 6, 2013

Ms. Anne L. Olson, P.E.
Senior Water Resources Control Engineer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, No. 200
Rancho Cordova, California 95670

RE: Comments to Proposed CDO, City of Ione WWTF

Dear Ms. Olson,

On behalf of the City of Ione ("Ione" or "City"), please accept and consider these comments to the draft cease and desist order ("CDO") that the Regional Water Quality Control Board ("RWQCB" or "Board") has proposed for adoption at its April 2013 Meeting. For your reference, this letter begins with a short summary of the changes Ione is requesting to the draft CDO as the City believes certain CDO provisions lack a scientific or technical basis. If these reasonable changes are accepted the City will support the adoption of the draft CDO. City staff has enjoyed working with Board staff to date and looks forward to a continued partnership to resolve water quality issues related to Ione's wastewater treatment facility.

The City requests five changes to the draft CDO. In short, these changes are listed here with the rationale for each change described in further detail below.

1. Change the various deadline dates from May to October and remove interim compliance dates that would accelerate the October 30, 2013 compliance deadline in the Board's 2011 CDO;
2. Change date of construction of new Monitoring Well MW2A from April to July 2013 and allow installation of new aerators in conjunction with the rest of the construction work rather than in advance of the overall project certification deadline;
3. Use only two closest monitoring wells (MW2 and MW2A) as compliance wells and develop statistically significant concentration reductions for each compliance well;
4. Use best available science to establish concentration reduction levels of iron and manganese in the local groundwater; and
5. If groundwater concentration triggers require filling the bottom two-feet of pond 5, allow the use of clean soil rather than clay to allow continued percolation of oxygenated water to attenuate local iron and manganese levels.

Regulatory History and Background

The City of Ione understands and appreciates the Regional Board's enforcement history involving the City of Ione. For the past 18 months, however, the City has diligently addressed the RWQCB's concerns as set forth in the 2011 CDO (R5-2011-0019) and relayed through continued discussion with Board staff. While some of the City's recent change in direction was intended to ensure compliance with the RWQCB's enforcement efforts, much of the change in direction was spurred by wholesale change in those City personnel responsible for environmental and regulatory compliance.

Until the last week of January 2013, when the City first learned that the RWQCB was intending to issue a draft CDO to revise or replace the existing 2011 CDO, the City has been diligently working toward compliance with the 2011 CDO. The City's efforts were designed to target compliance with two major provisions of the 2011 CDO. The first requirement is a provision requiring that "[t]he Discharger shall construct facility improvements that will effectively stop the mechanisms that result in mobilization and discharge of iron and manganese...." (Provision 2, R5-2011-0019.) The second requirement establishes a deadline at which point the mobilization of iron and manganese from pond 5 into the local groundwater must end. That requirement provides that "[b]y 30 October 2013, the Discharger shall submit a technical report certifying that (1) the improvements/expansion project has been completed, (2) the facility does not discharge to Sutter Creek in violation of the Clean Water Act, and (3) any groundwater degradation that occurs due to treatment and disposal of wastewater is consistent with State Water Board Resolution 68-16." (Provision 4.c, R5-2011-0019.)

The City's current compliance project is intended to meet the RWQCB's objectives as outlined in the 2011 CDO. Notably, the 2011 CDO did not require remediation of groundwater nor did it impose concentration targets for iron and manganese levels in the local groundwater. The City is on schedule to construct, by 30 October 2013, facility improvements that will effectively stop the mechanisms that result in the mobilization and discharge of iron and manganese. There is no scientific evidence that the City was discharging effluent or degraded groundwater to Sutter Creek in violation of the Clean Water Act. As a result, the City will be in compliance with State Board Resolution 68-16 and the 2011 CDO by 30 October 2013.

In summary, the City's improvements eliminate the cause of anoxic conditions at the bottom of pond 5 and drastically reduce the use of the ponds for percolation by reclaiming treated wastewater for irrigation purposes during the growing season. By avoiding discharge to the ponds during the dry irrigation season the City will be able to remove the sludge at the bottom of pond 5 in year one and in future years will allow the City to maintain the percolation ponds and prevent the recurrence of a sludge layer. The City will remove about eleven tons of organic sludge from the bottom of pond 5 along with any contaminated anoxic soil. The eleven tons of organic sludge creates an oxygen sink where the effluent mobilizes iron and manganese into the surrounding groundwater.

Explanation of CDO Changes Sought by the City of Ione

1. *Change Various Dates within the CDO.*

The 2011 CDO and the draft CDO establish a deadline of 30 October 2013 for project completion and certification. Even Board staff believes that deadline is an aggressive schedule that will be difficult to achieve. First, the draft CDO changes the current project compliance and certification deadline from October 30, 2013 (as outlined in the 2011 CDO) to October 1, 2013. The City asks that the October 30, 2013 deadline for project certification be retained. The draft CDO also accelerates the October 30, 2013 compliance deadline by creating two new interim deadlines: (1) a deadline for installation of a new monitoring well (further discussed below); and (2) a deadline for installation of increased aeration capacity.

Further, the draft CDO proposes assessment deadlines that lack any scientific basis and are inconsistent with the proposed CDO's own findings. For instance, the draft CDO requires an assessment of the facility upgrades by May 1, 2014 (compliance timeline and tasks, page 12). Draft CDO Finding No. 25(h) acknowledges that the City expects to see statistically significant improvements at the downgradient wells within one year of the proposed upgrades, which comports with the technical assessment provided on behalf of the City by Dr. Steve Deverel of Hydrofocus – "Measuring Statistically Significant Manganese and Iron Concentration Changes in Monitoring Wells, City of Ione, WWTF" ("Hydrofocus Report"). Since the earliest timeframe that statistically significant changes will be seen in groundwater concentrations is at least one year, we request that the assessment of facility upgrades be due one year after October 30, 2013, not May 1, 2014. The City asks that all other deadlines in the draft CDO that tier from that first deadline be extended by a similar timeframe to allow sufficient time to evaluate the facility upgrades.

2. *Change date of Construction of Monitoring Well MW2A from April to July 2013 and Allow Installation of New Aeration Capacity during Project Construction.*

As noted above, the acceleration of one of the compliance deadlines from October 30, 2013 to May 2013 includes the installation of new monitoring well MW2A. From a procedural standpoint, the City has no objections to accelerating the timeframe for installation of the new monitoring well. From a practical standpoint, however, the location of the new well is proposed to offer the best opportunity to assess the effectiveness of the City's facility improvements, it is located in an area that will see intensive construction of pipelines through the area and will see extensive vehicular traffic as the City's contractor constructs the project. The City requests, therefore, that the City be allowed to install the new monitoring well in July, rather than April 2013 to avoid the destruction or damage of the newly installed well during construction activities.

Similarly, because the City is using a low-bid contracting process, the City requests that the compliance deadline for installation of new aeration capacity as proposed in the draft CDO's provision 7 be extended from June 2013 to 1 October 2013 and that the report regarding installation of the additional aeration capacity be included with the overall project certification

report. Further, the City requests that the increased aeration capacity proposed in the draft CDO be revised to comport with the additional aeration capacity as proposed by the City in its Report of Waste Discharge.

3. *Use only the Two Closest Monitoring Wells (MW2 and MW2A) for Compliance Wells to Measure Project Success*

The draft CDO proposes to use four wells as compliance wells (MW-2, 2A, 3 and 3A). Monitoring wells MW-2 and proposed well MW-2A are the closest in proximity to pond 5 and are the best wells from which to detect the efficacy of the proposed improvements. Even so, based on the best available technical calculations, these wells may not see a statistically significant improvement within the first year of plant operation solely because of the character of the underlying groundwater basin. The other two wells proposed as compliance wells to assess the efficacy of the project, monitoring wells MW-3 and MW-3A, may not see a statistically significant improvement in groundwater concentrations because of the hydrology of the area and because of the distance from pond 5 to monitoring wells MW-3 and MW-3A, even if the proposed improvements are 100% effective. (Hydrofocus Report at 4.) Since there is no scientific or technical basis for assessing efficacy through wells MW-3 and MW-3A on the timelines sought in the draft CDO, we request that wells MW-3 and MW-3A continue to be monitored as proposed but that only monitoring wells MW-2 and MW-2A be used as "compliance wells" to assess whether the facility improvements have stopped the mobilization of iron and manganese. The City also asks that after several monitoring events in MW-2A, for an opportunity to meet with Board staff to assess whether the predictions made in the Hydrofocus Report as to the characteristics of MW-2A are accurate and whether the hypothesized reductions are reasonable in light of actual data from MW-2A.

4. *Alter the Concentration Reductions Necessary to Demonstrate Project Success*

The draft CDO mandates that all four compliance monitoring wells (MW-2, 2A, 3 and 3A) achieve the same 25% reduction in manganese concentrations in all four wells within six months of certifying the facility improvements and the same 75% reduction in all four wells within 18 months. The draft CDO mandates the same reductions for iron in all of the wells except for MW-3A. Unfortunately, however, there is no scientific or technical basis for an across the board reduction of that percentage in the four compliance wells all of which are at different distances from pond 5. As demonstrated in the enclosed Hydrofocus Report, even if the facility improvements are 100% effective in eliminating further mobilization of iron and manganese into the groundwater, none of the compliance monitoring wells will see a 25% reduction in manganese concentrations within the first year, let alone within the six months currently proposed in the draft CDO. Only one of the three compliance monitoring wells might show a 25% reduction in iron concentrations (MW-3A does not have elevated iron levels) within the first year but this reduction is hypothetical since that reduction would occur in compliance well MW-2A, yet to be constructed.

In prior discussions with Board staff the City had asked that the City be allowed to use a statistically significant assessment of iron and manganese levels in the local groundwater to

determine whether the facility improvements are effective. Board staff seemed reluctant, however, to accept such a statistical analysis and would like to use a numerical standard to avoid future disputes about whether the facility improvements have stopped the mobilization of iron and manganese. As a result, the City has proposed objective compliance ranges based on the assessment of statistically significant improvements taken from the enclosed Hydrofocus Report.

While the City had hoped that reductions in iron and manganese levels in the local groundwater would be more robust, Board staff has informed the City that although groundwater quality is the measuring stick for project effectiveness active groundwater remediation is not contemplated by the draft CDO. Even so, the draft CDO measures the efficacy of proposed facility improvements, designed to "*effectively stop the mechanisms that result in the mobilization and discharge of iron and manganese in violation of State Board Resolution 68-16*" as mandated by the 2011 CDO, by assessing the remediation of local groundwater. Notably, though Board staff believes lining the City's percolation ponds would help remediate iron and manganese concentrations in the shallow groundwater such an improvement would increase the amount of time it would take for natural attenuation of iron and manganese to occur because the natural groundwater would no longer be flushed by well-oxygenated water percolating through City percolation ponds 5-7.

The draft CDO also requires full compliance with the CDO and the WDRs no later than 1 May 2016. While the City, by October 2013, will ensure that its discharges are not causing mobilization of iron and manganese as required by the 2011 CDO, the groundwater impacted by past disposal practices will not be remediated within that timeframe. Had the City been aware that Board staff would, at the eleventh hour, propose to use groundwater remediation as the measurement by which its compliance project would be assessed the City might have proposed different or additional facility improvements. The City might also have proposed additional mechanisms designed to ensure aeration of the local water table which could cause iron and manganese to precipitate out of the groundwater.

5. *If Additional Soil is Needed in the Bottom of Pond 5, that Clay Soil not be Required so as to allow Continued Percolation through Two-feet of Additional Clean Fill*

As a second phase of the project, should aeration, mixing, and removal of the sludge in pond 5 not prove entirely effective, the City's Report of Waste Discharge proposed to add two feet of clean soil, not clay, to the bottom of pond 5 to further increase the distance between the groundwater and the bottom of pond 5. This addition of soil, rather than clay, will still allow the pond to be used as a percolation pond. The addition of soil is intended to reduce the mixing depth and to reduce the influence of groundwater on pond 5 water temperatures, both of which, in conjunction with improved aeration and pond 5 mixing, will help raise oxygen-reduction potential ("ORP") and dissolved oxygen ("DO") values in pond 5. Adding two feet of clean soil will also increase the depth of the vadose zone immediately under pond 5. Pond 5 is several feet deeper than either pond 6 or pond 7 so filling part of pond 5 should encourage pond 5 to behave more like ponds 6 and 7 neither of which exhibit low ORP or DO. If the City is forced to line pond 5 with clay, the project will not have sufficient disposal capacity. (Ione Report of Waste Discharge at 22; Proposed Waste Discharge Requirements Order R5-2013-XXXX Section 50.b.)

Conclusion

The City was not informed that a new CDO would be issued until days before the draft CDO was to be published; the City has submitted two previous rounds of comments and revisions in an attempt to address the numerous factual, scientific, and technical errors in the draft CDO. We have enclosed those communications for your convenience.

The City of Ione is interested in working with Board staff to achieve regulatory compliance and believes that the issues raised in this letter and in its prior letters can be resolved before the April Board hearing.[1] We hope Board staff has the same interest in resolving these matters in advance of the hearing so that valuable public resources can be used to assure the protection of water quality rather than in opposing each other at contested hearings.

Thank you for the opportunity to provide a third round of comments on the draft CDO. Please do not hesitate to contact me directly should you have any questions.

Sincerely,

Christopher M. Sanders

Enclosure

cc: City Manager Ed Pattison (via e-mail only)
City Attorney James Maynard (via e-mail only)
Mary Grace Pawson, GHD (via e-mail only)
Steve Deverel, Hydrofocus (via e-mail only)

[1] The City of Ione initially had comments to the Waste Discharge Requirements also proposed for adoption at the April 2013 RWQCB Meeting. However, after discussions with RWQCB staff, the concerns appear to have been amicably addressed with changes to the WDRs.

DOCUMENT # 2

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-00XX

CEASE AND DESIST ORDER
FOR
CITY OF IONE WASTEWATER TREATMENT FACILITY
AMADOR COUNTY

TO CEASE AND DESIST
FROM DISCHARGING CONTRARY TO REQUIREMENTS

The California Regional Water Quality Control Board, Central Valley Region, (Central Valley Water Board or Board) finds that:

1. On 26 May 1995, the Central Valley Water Board adopted Waste Discharge Requirements (WDRs) Order 95-125 (the 1995 WDRs) for a wastewater treatment and disposal facility owned and operated by the City of Ione (hereafter referred to as Discharger, City of Ione, or City). On __ April 2013, the Board adopted WDRs Order R5-2012-XXXX (the 2013 WDRs) and rescinded WDRs Order 95-125 except for purposes of enforcement.

2. On 11 July 2003, the Board issued Cease and Desist Order (CDO) R5-2003-0108 (the "2003 CDO") for the City of Ione. On 8 April 2011, the Board rescinded the 2003 CDO except for purposes of enforcement, and issued CDO R5-2011-0019 (the "2011 CDO").

3. The Discharger's wastewater treatment facility (the Facility) is in Amador County in Section 26, T6N, R9E, MDB&M. The Facility accepts and treats domestic wastewater from the City of Ione, filter backwash water from a water treatment plant operated by Amador Water Agency, domestic wastewater from Preston Youth Authority's administration buildings, and filter backwash water from Castle Oaks Water Reclamation Plant. In addition, the Discharger accepts secondary effluent from Preston Reservoir for disposal in the Facility's percolation/evaporation ponds.

4. The Facility consists of seven ponds covering approximately 28 acres. The first four ponds provide secondary treatment via aeration and settling, and the remaining three ponds provide disposal of treated effluent via percolation and evaporation. Neither the sixth nor the seventh pond was permitted under the 1995 WDRs. The Facility is adjacent to Sutter Creek, with the closest pond approximately 100 feet from the Creek.

5. The unlined ponds are constructed in alluvial deposits overlaying a clay formation. Groundwater at the site and surrounding properties is very shallow (approximately 5 to 25 feet below ground surface). The Discharger has been monitoring shallow groundwater since 2002.

6. A January 2003 report submitted by the Discharger states that seepage was observed in Sutter Creek, at an estimated rate of 173 gallons/day. The report concludes that at times of very low flow, or no flow, there is the potential for groundwater to flow from the

area underlying the wastewater treatment facility into the creek[1]. It is likely that this seepage contains constituents which are present as a consequence of the treatment and discharge of waste in unlined ponds[2]. The indirect discharge (seepage) of polluted groundwater is in violation of Prohibition A.1 of both the 1995 WDRs and the 2013 WDRs.

7. Groundwater monitoring shows that the discharge of wastewater has polluted the groundwater underneath and downgradient of the facility. The main constituents of concern are iron and manganese. The background monitoring well[3] contains dissolved iron at an average concentration of 14 ug/l, while the downgradient well[4] has an average concentration of 3,800 ug/l. The secondary Maximum Contaminant Level for iron is 300 ug/l. A similar situation exists for manganese. The background well contains an average concentration of 7 ug/l of dissolved manganese, while the downgradient well[5] has an average of 5,500 ug/l, as compared to the secondary maximum contaminant level of 50. The groundwater monitoring therefore indicates that the discharges from the Facility are causing a condition of pollution in the groundwater.

8. It is unknown when the Discharger constructed wastewater disposal Pond 6. However, wastewater disposal Pond 7 was constructed in the early 2000's. The City did not submit a Report of Waste Discharge (RWD) prior to the construction or use of these ponds, which is considered a violation of WDRs Order 95-125 and the Water Code. The 2013 WDRs permit the use of these ponds.

9. At times of the year, the shallow groundwater is close to ground surface in the vicinity of the Facility. Board staff has received complaints of surfacing effluent in the vicinity of Pond 7. The City's 2010 models showed that the facility expansion proposed at that time would cause the local water table to rise as much as two feet, and would result in seasonal surfacing of wastewater at the southern end of the Facility. Surfacing wastewater would be a violation of both the 1995 WDRs and the 2013 WDRs.

2001-2003 Enforcement Actions

10. Sutter Creek flows from east to west approximately 100 feet north of the northernmost of the Facility's ponds. Beginning in September 2000, Board staff observed seepage entering the creek along the southern bank of Sutter Creek. Staff was concerned that the observed seepage was a discharge of effluent from the Facility's ponds to Sutter Creek. However, creek water analyses completed by both the Discharger and staff did not conclusively show evidence of wastewater in the seepage. During a 21 September 2001 inspection, staff observed that the Discharger had begun construction of the seventh percolation pond without submitting a Report of Waste Discharge (RWD). Staff advised the Discharger that the WDRs would have to be revised before any wastewater

---

[1] Finding No. 9 of CDO R5-2011-0019.
[2] Finding No.19 of CDO R5-2011-0019.
[3] Data obtained from MW-1 for the period of March 2009 through September 2012.
[4] Data obtained from MW-3A for the period of March 2009 through September 2012

was discharged into the pond. However, the Discharger began using the pond without obtaining regulatory coverage for the expanded facility.

11. On 9 October 2001, the Executive Officer issued an Order pursuant to Water Code section 13267 (the 13267 Order), requiring the Discharger to submit a groundwater monitoring well installation work plan by 1 December 2001; a monitoring well installation report within 60 days of Board staff's approval of the work plan; and a complete RWD (to address the new pond) by 15 April 2002. The Discharger installed the monitoring wells but did not submit the RWD.

12. On 21 January 2003, the Discharger submitted a *Hydrogeologic and Geotechnical Report*. The report documented installation of groundwater monitoring wells and provided an assessment of potential seepage to Sutter Creek. Based on the subsurface investigation, groundwater levels, and in situ hydrogeologic testing, the report stated that shallow groundwater immediately adjacent to and downgradient of the ponds exhibited increased mineral concentrations[5]. At the time of the investigation, seepage was observed in Sutter Creek[6]. The report estimated the seepage rate to be approximately 173 gallons per day[7] into the creek. The report concluded that, at times of very low flow or no flow, there is a potential for groundwater to flow from the area underlying the wastewater treatment facility to the creek[8]. The report did not include recommendations for further evaluation, nor did it propose facility improvements to stop the seepage discharge into the creek.

2003 CDO and Violations of the CDO

13. On 11 July 2003, the Central Valley Water Board issued Cease and Desist Order R5-2003-0108 (the 2003 CDO) as a result of wastewater-impacted seepage to Sutter Creek, degradation of groundwater quality, and failure to submit a RWD as required by the 13267 Order.

14. The 2003 CDO required that the Discharger come into compliance with Discharge Prohibition A.1 and the Groundwater Limitations of the 1995 WDRs no later than 30 December 2005. The 2003 CDO also required that the Discharger comply with a schedule for submittal of certain technical reports.

15. However, Discharger did not come into compliance with Discharge Prohibition A.1 of the 1995 WDRs by 30 December 2005, and therefore violated the 2003 CDO.

16. The technical studies and monitoring completed since adoption of the 2003 CDO show that the unlined treatment and disposal ponds created a localized groundwater "mound" that causes shallow groundwater beneath the Facility's ponds to flow towards Sutter

---

[5] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, page 2.
[6] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, Plate 6.
[7] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, pages 3-7.
[8] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, page 10

Creek, where it seeps into the creek channel during periods when natural flows in the creek are low.

17. The Discharger did not come into compliance with the Groundwater Limitations of the 1995 WDRs, in violation of the 2003 CDO.

18. The Discharger's groundwater monitoring data and technical reports show that the shallow groundwater contains elevated concentrations of iron and manganese downgradient of the Facility. Specifically, monitoring wells MW-2 and MW-3A are downgradient of the Facility's ponds, as well as directly adjacent to, and upgradient of, Sutter Creek. These wells consistently have dissolved iron and manganese concentrations greater than the background well. The following table summarizes dissolved iron and manganese concentrations between March 2009 and September 2012[9].

Dissolved Iron and Manganese Concentrations in Groundwater (µg/L)

	Monitoring Wells and Locations			
Constituent	**MW1 (Background)**	**MW-2 (Downgradient)**	**MW-3A (Downgradient)**	**Secondary MCL**
Dissolved Iron				
Range of Results	ND<5 to 31	25 to 2,100	ND<50 to 6,800	300
Mean Results	13.9	1,940	3 ,820	
Dissolved Manganese				
Range of Results	ND<5 to 28	3,100 to 4,600	3,000 to 6,500	50
Mean Result	6.9	3,920	5,510	

These results show that the discharge has caused dissolved iron and manganese in shallow groundwater to exceed the secondary MCLs, in violation of the groundwater limitations. Although iron and manganese are not present in the Facility's effluent at high concentrations, the presence of degradable organic matter in the wastewater depletes oxygen, which creates reducing conditions in the groundwater mound beneath the WWTF's ponds. Reducing conditions promote dissolution of iron and manganese. These minerals are naturally present in the soil beneath the ponds. This mechanism of groundwater degradation was acknowledged in the December 2009 Final EIR, which states:

> *Dissolved iron and manganese levels* [in shallow groundwater] *are likely a result of anaerobic decomposition of biological material. This decomposition occurs either in the anaerobic zone at the bottom of the existing treatment ponds or subsurface as effluent enters the groundwater at the percolation ponds.*[10]

Combined with the fact that MW-2 and MW-3A are approximately 100 feet upgradient of the portion of Sutter Creek where groundwater has been observed seeping into the creek, these data show that it is likely that the seepage contains constituents that are

---

[9] Prior to 2008, groundwater samples were not filtered before analysis for metals. Without filtration to remove clay and silt particles, analytical results for metals would include any metals contained within the minerals that form the soil.

[10] City of Ione Wastewater Treatment Facility Final EIR, pages 2-36.

present as a consequence of the treatment and discharge of waste in unlined ponds. The Discharger's 1995 WDRs did not allow these impacts to occur, and the Discharger was required to eliminate the processes that resulted in the discharge of polluted groundwater to the creek. This could have been accomplished by eliminating the groundwater degradation or by eliminating the seepage.

19. The Discharger did not comply with Task 8 of the 2003 CDO. Task 8 required submittal of a complete RWD with proposed improvements to bring the facility into compliance with the 1995 WDRs and the 2003 CDO. Board staff concurred that the proposed lined treatment ponds, tertiary treatment, and disinfection with ultraviolet light would greatly improve the effluent quality discharged to the percolation/evaporation ponds, which might reduce the level of groundwater degradation caused by the discharge. However, the Discharger did not show that the design would stop the seepage of degraded groundwater into Sutter Creek, and did not show that the proposed improvements would result in significantly lower concentrations of iron and manganese in the shallow groundwater.

20. The City had been in violation of its 1995 WDRs since 2001, had not complied with the 2003 CDO, and had not submitted a complete RWD. The Discharger had been unable to commit to a course of action to prevent groundwater pollution, wastewater seepage to Sutter Creek, and surfacing of wastewater. In addition, the Discharger continued to discharge wastewater to two unpermitted ponds during the entire eight year period, in violation of the 1995 WDRs.

2011 CDO and Violations of the CDO

21. As described above, the City failed to comply with the 2003 CDO. Although the Water Board had the option of assessing an administrative civil liability for the failure to comply, instead the Board chose to adopt a new CDO to provide the City with a new timeline for compliance. On 8 April 2011, the Water Board adopted CDO R5-2011-0019, which requires, in part, that the City:

    a. Address the three underlying compliance issues: groundwater pollution with iron and manganese; seepage of polluted groundwater into Sutter Creek; and the construction and use of a two unpermitted effluent disposal ponds;
    b. Submit a Seepage Discharge Compliance Plan by 30 January 2012; and
    c. Construct facility improvements that will effectively stop the mobilization and discharge of iron and manganese, and either:
        i. Stop any indirect discharge (seepage) of degraded groundwater to Sutter Creek that is in violation of the Clean Water Act; or
        ii. Obtain an NPDES Permit that regulates the indirect discharge of degraded groundwater to Sutter Creek.

22. The City chose option (i), above, and therefore the CDO required that the City submit a RWD by 30 May 2012 and then by 30 October 2013, certify that (a) the facility upgrades have been completed, (b) the facility does not discharge to Sutter Creek in violation of

the Clean Water Act, and (c) any groundwater degradation that occurs due to treatment and disposal of wastewater is consistent with State Water Board Resolution 68-16.

23. The City of Ione did not submit the RWD until 30 July 2012. Staff's review found that the RWD did not meet the criteria of the 2011 CDO, and therefore the City had failed to meet its obligation to submit a complete RWD by 30 May 2012. The Discharger subsequently submitted a revised RWD on 28 September 2012, which staff determined to be satisfactory.

2012 Administrative Civil Liability

24. On 10 September 2012, the Executive Office issued Administrative Civil Liability Complaint R5-2012-0558 for $143,552 to the City of Ione for failure to submit a complete RWD as required by the 2011 CDO. On 10 January 2013, the matter was settled when the Assistant Executive Officer signed the Final Settlement Agreement and Stipulation. The City of Ione was assessed a civil liability of $123,818. Of that amount, $61,909 was paid into the Cleanup and Abatement Account and the remaining $61,909 will be permanently suspended after the City completes an Enhanced Compliance Action (the Preston Avenue Sewer Slip Lining Project).

Rationale for 2013 CDO

25. During 2012, the City submitted multiple RWDs and participated in a number of meetings with staff to present proposed upgrades to bring the facility into compliance with the 2011 CDO and the 2003 WDRs. Because the City's proposed upgrades do not meet the timeline set forth in the 2011 CDO, this 2013 CDO is necessary to allow additional time to come into compliance with the groundwater limits and to stop the seepage of degraded groundwater to the creek. Based on the City's submittals and meetings, the information outlined below is a summary the City's proposal as it relates to groundwater quality. The City of Ione will:

    a. Construct and operate two new water recycling land application areas (LAAs), which would include an 11-acre area referred to as the WWTF Field and a 67-acre parcel known as the Town Field;

    b. Install and operate a sodium hypochlorite injection system and contact chamber for effluent disinfection prior to land application;

    c. Install and operate additional aerators in treatment Ponds 1 through 3 to achieve the horsepower shown in the table below:

Aeration Capacity

	Pond 1	Pond 2	Pond 3	Pond 4
Existing Capacity	15 HP	7.5 HP	7.5 HP	7.5 HP
Upgraded Capacity	30 HP	~~27.5~~20 HP[1]	~~17.5~~10 HP[2]	No change

d. Install and operate a mixer unit in Pond 5 (completed June 2012).

e. Remove anoxic soil and sludge from Pond 5 and sludge from Pond 6, and subsequently backfill and compact with clean fill to bring the bottom of these two ponds to an elevation above the seasonal high groundwater level.

f. Monitor, on a monthly basis for one year, at Ponds 5, 6, and 7 using field instruments to measure dissolved oxygen (DO), oxygen reduction potential (ORP), and sludge depths.

g. Install a new groundwater monitoring wells between Ponds 1 and 5 (completed in ~~April~~ July 2013).[3]

h. Monitor, on a monthly basis for one year, at groundwater wells MW-2, MW-3, MW-3~~A~~, and the ~~new well~~ MW-2A[4] for pH, electrical conductivity (EC), DO, ORP, total dissolved solids (TDS), stable isotopes, total and fecal coliform, nitrate as nitrogen, TKN, chloride, sodium, and dissolved boron, iron and manganese. Based on the installation of the mixer and aerators, the City expects to see improvements in groundwater quality at the new well within six months, and statistically significant improvements at the downgradient wells within one year.[5]

i. If improvements in groundwater quality are not seen within one year, then 2-4 feet of clean ~~clay~~ soil[6] will be added to the bottom of Pond 5.

j. If groundwater quality is not improved after the placement of ~~clay~~soil,[7] then the City will no longer percolate wastewater as a disposal method (either the percolation ponds will be backfilled or they will be converted to lined storage ponds).

k. As part of Phase II capacity improvements, construct a 17 million gallon clay-lined pond, remove the 11-acre WWTF Field as a LAA, and construct and operate two new LAAs (56 acres total).

26. The 2013 WDRs establish flow limits, groundwater quality limits, and effluent quality limitations, permit the use of Ponds 6 and 7, and, after improvements are made, allow the City to discharge treated wastewater to land application areas. However, the City cannot immediately comply with Prohibition A.1, Groundwater Limitation D.b, Discharge Specification E.1, or Discharge Specification E.3 of the 2013 WDRs.

a. Prohibition A.1 states: *Discharge of wastes to surface waters or surface water drainage courses is prohibited.*

b. Groundwater Limitation D.b states, in part,: *Release of waste constituents from any portion of the WWTF shall not cause groundwater to… contain constituents in concentrations that exceed either the Primary or Secondary MCLs established therein.*

c. Discharge Specification E.1 states: *No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.*

d. Discharge Specification E.3 states: *Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.*

27. The 2003 CDO required that the City comply with WDRs Order 95-125, including the Prohibitions and the Groundwater Limitations in that Order, by December 2005. The City did not comply. The 2011 CDO gave the City additional time to comply with these Prohibitions and Groundwater Limitations, and set a compliance date of 30 October 2013. However, according to the City's own submittals, its current proposal will not ensure that by 30 October 2013, it will be able to make the findings required by the 2011 CDO that (a) the improvements have been constructed, (b) the facility does not discharge to Sutter Creek in violation of the Clean Water Act, and (c) any groundwater degradation is consistent with State Water Board Resolution 68-16. This 2013 CDO is being issued to ensure that, should the City's current proposal not eliminate the discharge of polluted groundwater to Sutter Creek or prevent groundwater degradation that does not meet the conditions of State Water Board Resolution 68-16, then the City will implement all appropriate actions to ensure that these conditions are resolved in an enforceable timeline.

Regulatory Considerations

28. The Central Valley Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised September 2009 (the "Basin Plan"), designates beneficial uses, includes water quality objectives to protect the beneficial uses, and includes implementation plans to implement the water quality objectives.

29. Surface water drainage from the facility is to Sutter Creek, a tributary of the Cosumnes River. The beneficial uses of the Cosumnes River, as stated in the Basin Plan, are municipal and domestic supply, irrigation, stock watering, contact recreation, canoeing and rafting, other noncontact recreation, warm and cold freshwater habitat, warm and cold migration, warm and cold spawning, and wildlife habitat.

30. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

31. Water Code section 13301 states, in relevant part:

> When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action. In the event of an existing or threatened violation of waste discharge requirements in the operation of a community sewer system, cease and desist orders may restrict or prohibit the volume, type, or concentration of waste that might be added to such system by discharges who did not discharge into the system prior to the issuance of the cease and desist order. Cease and desist orders may be issued directly by a board, after notice and hearing.

32. Water Code section 13267 (b) states:

> In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

33. The technical reports required by this Order are necessary to assure compliance with both this Order and the WDRs, and to ensure protection of public health and safety. The Discharger owns and operates the facility that discharges the waste subject to this Order.

34. Issuance of this Order is an enforcement action of a regulatory agency, and therefore, is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code § 21000 et seq.), in accordance with California Code of Regulations, title 14, section 15321(a)(2).

IT IS HEREBY ORDERED that, pursuant to Water Code sections 13301 and 13267, the City of Ione, its agents, successors, and assigns shall implement the following measures necessary to ensure long-term compliance with WDRs Order R5-2013-XXXX, or any superseding permits or orders issued by the Central Valley Water Board.

This Cease and Desist Order rescinds and replaces Cease and Desist Order R5-2011-0019 except for the purpose of enforcing violations that have occurred to date.

Any person signing a document submitted to comply with this Order shall make the following certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

1. **Effective immediately**, the Discharger shall comply with all requirements of WDRs Order R5-2013-XXXX (or subsequent WDRs that may rescind and/or replace Order R5-2013-XXXX), with the exception of Prohibition A.1 (as it relates to the discharge of degraded groundwater into Sutter Creek), Groundwater Limitation D.b, Discharge Specification E.1, and Discharge Specification E.3 as provided for in this Order, below.

2. In accordance with the time schedule set forth in this Order, the Discharger shall construct facility improvements that will effectively stop the mechanisms that result in the mobilization and discharge of iron and manganese in violation of the Groundwater Limitations of the 2013 WDRs, shall effectively stop any indirect discharge (seepage) of polluted groundwater to Sutter Creek, and shall bring the facility into compliance with the 2013 WDRs. Compliance with the WDRs and this Order must be achieved no later than ~~1 May~~30 October **2016**.[8]

Definitions

3. The "baseline concentrations" for MW-2, MW-3, ~~and~~ MW-3A[9] shall be those concentrations reported in the Fourth Quarter 2012 Groundwater Monitoring Report, which are listed in the table below. By ~~April~~ July 2013, the Discharger will install one new groundwater monitoring well (hereafter the "new well") between Pond 5 and Pond 1. The baseline concentrations for the "new well" shall be ~~those~~ the median of those concentrations obtained during the ~~April~~ July through October 2013 monthly sampling event~~s~~.[10]

Baseline Concentrations for Selected Groundwater Monitoring Wells

Constituent	MW-2	MW-3	MW-3A	New Well
Dissolved Iron (ug/L)				Note 1
Dissolved Manganese (ug/L)				Note 1

Note 1: As reported in the April 2013 groundwater monitoring report.

4. For the purposes of this Order, "significant improvement" is a defined percent reduction of the baseline concentrations for groundwater at MW-2, MW-3, MW-3A, [11] and the new well.

5. If there is any perceived conflict between the compliance dates in the 2013 WDRs and this CDO, then the dates in this CDO take precedence.

Monitoring and Reporting

6. In addition to conducting the monitoring required by Monitoring and Reporting Program (MRP) R5-2013-XXXX, the Discharger shall:

a. Monitor the wastewater in Ponds 5, 6, and 7 for dissolved oxygen (DO), oxygen reduction potential (ORP), temperature, and sludge depth. Samples shall be collected at least once per month, and shall be collected and analyzed under an approved Sampling and Analysis Plan.

b. Monitor the groundwater in wells MW-2, MW-3, ~~MW-3A,~~ [12] and the new well for the following minimum constituents; pH, EC, DO, ORP, TDS, dissolved iron, and dissolved manganese. Sample collection and analysis shall follow the procedures required by MRP R5-2013-XXXX.

c. Record the daily hours of operation of each aerator and mixer during the reporting period.

d. Report the results of the additional monitoring in a *CDO Monthly Monitoring Report* that is submitted by the **fifteenth day of the second month** following each calendar month (i.e., the work performed in April shall be reported by the 15th of June, and the work performed in May shall be reported by the 15th of July of each year). The monitoring reports shall meet the monitoring report requirements described in MRP R5-2013-XXXX.

e. The above monitoring shall begin during the month of ~~April~~ July **2013** and shall continue until this CDO is rescinded or until Ponds 5, 6, and 7 are no longer operated as percolation ponds. The first monitoring report is due on **15** ~~June~~ **September 2013**.[13]

Compliance timeline and tasks

7. **By** ~~1~~ 30 ~~June~~ October **2013**,[14] the Discharger shall submit an *Additional Aeration Report* that documents that additional aerators have been added to Ponds 1, 2, and 3 such that the aeration horsepower is at least that described in Finding 25.c, above.

8. **By 1** ~~June~~ July **2013**,[15] the Discharger shall submit an *Anoxic Soil and Sludge Removal Work Plan* describing the removal of anoxic soil and sludge from Pond 5 and sludge from Pond 6, and the installation and compaction of clean fill to bring the bottom of these ponds above the seasonal high groundwater level identified in the WDRs. The plan shall include the proposed procedures and testing frequencies for identifying anoxic soils (e.g., field tests for ORP); procedures for soil and sludge removal, drying, and disposal; and the procedures to backfill and compact the clean fill. The plan shall include the measures to be used to control runoff or percolate from the removed material, and a schedule that shows how all dried material will be removed from the site prior to the onset of the rainy season on 1 October 2013.

9. **By** ~~1~~ 30 **October 2013**[16], the Discharger shall submit a *Sludge and Anoxic Soil Removal Report*. This report shall document that the sludge and anoxic soil has been removed, disposed of at a facility permitted to accept the waste, and that clean fill has been compacted and placed to bring the bottom of these ponds to above the seasonal high

groundwater level.

10. **By ~~1~~ 30 ~~May~~ October 2014**,[17] the Discharger shall submit the *Effectiveness of Facility Upgrades Evaluation Report #1*. The report shall evaluate whether or not the dissolved iron ~~and manganese~~ concentrations in monitoring wells MW-2 has been reduced by 1% to 10% while manganese concentrations in MW-2 has been reduced by 0% to 24%, ~~MW-3, MW-3A~~,[18] and dissolved iron and manganese concentrations in ~~the~~ new well MW-2A have been reduced by approximately 40% ~~at least 25%~~ for iron and 15%[19] for manganese from the "baseline concentrations" described in Item 3.[20] The reductions estimated for well MW-2A assume that the median and variance of manganese and iron concentrations in this well will be identical to the median and variance determined for the data collected in MW-2A. If they are different, The City will determine using statistical analysis (Mann-Kendall trend test), whether changes in concentration relative to the baseline concentration determined during July 2013 to October 2013, are statistically significant and will provide those numbers to Board staff for use in determining project efficacy. If concentrations have been reduced ~~to this level~~by this amount in each well, then the Discharger shall continue to take all appropriate actions to meet the final compliance date of 1 ~~May~~ October 2016.[21] However, if concentrations have not been reduced ~~by 25% over baseline~~ as described in this paragraph, then the Discharger shall submit the report described in Item #~~10~~11.

11. If it is required as a result of the *Effectiveness of Facility Upgrades Evaluation Report #1*, then by **15 ~~May~~ August 2014**[22], the Discharger shall submit a *Pond 5 ~~Lining~~ Filling*[23] *Work Plan*. This work plan shall include procedures to line the bottom 2-4 feet of Pond 5 with clean ~~clay or with a HDPE liner~~soil, the geotechnical and analytical material specifications for the ~~clean clay or liner~~soil, and the proposed source of the ~~liner material~~soil.[24] The specification shall include the proposed geotechnical tests for the source material and field tests for placement and compaction of the material. The Work Plan shall provide documentation of whether the proposed material is clean (based on analytical results) and shall include a construction quality control plan for ensuring compliance with the material specifications. The Work Plan shall also describe the hydraulic conductivity of the proposed ~~liner~~ fill material and evaluate whether the action of ~~lining~~ filling the bottom two feet of the pond with ~~clay or HDPE~~ soil[25] will result in compliance with this Order by 1 ~~May~~ October[26] 2016. In addition, the Work Plan shall include a water balance and a Report of Waste Discharge if the water balance shows that the storage and disposal capacity is less than that described in the 2013 WDRs.

12. If required to submit a *Pond 5 ~~Lining~~ Fill Work Plan,* then by **30 November 2014**, the Discharger shall submit a *Pond 5 ~~Lining~~ Fill Construction Report* that shall document whether the pond was ~~lined~~ filled according to an approved work plan.[27]

13. **By ~~1~~ 30 ~~May~~ October 2015**, the Discharger shall submit the *Effectiveness of Facility Upgrades Evaluation Report #2*. The report shall evaluate whether or not the dissolved iron concentrations in monitoring well MW-2 have been reduced by 12% to 21% while manganese concentrations in MW-2 have been reduced by 28.5% to 50.5%,[28] and dissolved iron concentrations in new well MW-2A have been reduced by 100% to background levels and dissolved manganese concentrations in MW-2A have been reduced by 37.6% to 41%[29] from the "baseline concentrations" described in Item 3. If concentrations have been reduced by this amount in each well, then the Discharger

shall continue to take all appropriate actions to meet the final compliance date of 1 October 2016. ~~The report shall evaluate whether or not the dissolved iron and manganese concentrations in~~ MW-2, ~~MW-3, MW-3~~A, ~~and the new well have been reduced by at least 75% of the "baseline concentrations" described in Item 3. If concentrations have been reduced to this level in each well, then the Discharger shall continue to take all appropriate actions to meet the final compliance date of 1 May 2016.~~ However, if concentrations have not been reduced as described in this paragraph ~~by 75% over baseline~~, then the Discharger shall submit the report described in Item #~~13~~14.

14. If it is required as a result of the *Effectiveness of Facility Upgrades Evaluation Report #2*, then by **15 ~~May~~ October 2015**, the Discharger shall submit a *Percolation Pond Decommissioning and Alternate Effluent Disposal Plan*. The Discharger shall either propose to install a synthetic liner in Ponds 5, 6, and 7 such that they no longer operate as percolation ponds, or shall propose to backfill the ponds and no longer use them for storage or disposal. The work plan shall include an updated water balance. If the water balance indicates that there will be insufficient capacity after percolation disposal is removed, then the Discharger shall also submit a Report of Waste Discharge. The RWD must include a proposal for additional storage and disposal sufficient to meet the flow limitations in the 2013 WDRs, and must include a schedule for implementation that meets the final compliance date (1 ~~May~~ October 2016) of this Order.

15. By **1 November 2015**, the Discharger shall submit an *Effectiveness of Facility Upgrades Evaluation Report #3* that evaluates the reduction of dissolved iron and manganese concentrations in MW-2, MW-3, ~~MW-3A,~~[30] and the new well, and predicts whether or not the Discharger will meet the final compliance date of 1 ~~May~~ October 2016 in each well. If the data shows that compliance may not be achieved, then the Discharger shall propose additional steps in order to comply with the final compliance date in this Cease and Desist Order.

16. **By ~~1~~ 30 ~~May~~ October 2016**, the Discharger shall submit a *Final Compliance Report* which shall contain either:

    a. If the Discharger was required to submit the *Percolation Pond Decommissioning and Alternate Effluent Disposal Plan*, then the report shall show that the plan was implemented and that Ponds 5, 6, and 7 are no longer used for percolation disposal.

    b. If the Discharger was not required to decommission the percolation ponds, then the report shall certify that the Discharger fully complies with all aspects of the 2013 WDRs, and in particular, Prohibition A.1 (as it relates to the discharge of polluted groundwater into Sutter Creek), Groundwater Limitation D.b, Discharge Specification E.1, and Discharge Specification E.3.

In addition to the above, the Discharger shall comply with all applicable provisions of the Water Code that are not specifically referred to in this Order. As required by the Business and Professions Code sections 6735, 7835, and 7835.1, all technical reports shall be prepared by, or under the supervision of, a California Registered Engineer or Professional Geologist and signed/stamped by the registered professional.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement or may issue a complaint for administrative civil liability.

Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 11 April 2013.

PAMELA C. CREEDON, Executive Officer

---

[1] The City's Report of Waste Discharge proposed additional aeration in ponds 1-3, based on scientific and technical evidence, that would increase aeration in ponds 2 and 3 to a total of 20 HP and 10 HP respectively rather than 27.5 in pond 2 and 17.5 in pond 3 as proposed here. (Ione Report of Waste Discharge at 19.)

[2] See note 1.

[3] This new monitoring well will be denominated MW-2A and will be installed in July after the bulk of construction activity in and around pond 5 has been completed. If the City were to install the well in April 2013 as requested by Board staff there is a high likelihood that the well would be destroyed during construction as the well location is immediately west of pond 5 and is located on the main construction path. (Workplan for Installation of Groundwater Monitor Well MW-2A.) The City intends to collect samples and measure field parameters (dissolved oxygen, pH, oxidation-reduction potential and temperature) during monthly sampling events starting in July 2013. The City is concerned, however, that because the statistically significant concentration reductions of this new compliance well are based on a hypothesis of the characteristics of MW-2A that any numerical targets

for concentration reduction proposed for this well be open to revision once the City obtains actual data from the well.

[4] The City proposes that because Board staff proposes to measure project success through the reduction of iron and manganese levels in groundwater through natural attenuation that only the two monitoring wells nearest to pond 5, MW-2 and MW-2A, should be used for compliance purposes. Dr. Steve Deverel of Hydrofocus drafted a "Projected Statistically Significant Manganese and Iron Concentrations in Groundwater Monitoring Wells, City of Ione WWTF" ("Hydrofocus Report") which theorizes that while groundwater travel times are relatively short for both MW-2 and MW-2A (22-325 days and 5-68 days respectively) it will take much longer for groundwater flow to reach MW-3 and MW-3A (63-948 and 155-2322 respectively). (Hydrofocus Report at 4.) It does not seem practicable, given the potential travel times for groundwater to reach MW-3 and MW-3A, to use MW-3 and MW-3A as compliance wells.

[5] Regardless of whether two monitoring wells or four monitoring wells are used as compliance wells, the Hydrofocus Report makes clear that each monitoring well used for compliance purposes must be assessed separately for targeted reductions in future iron and manganese levels because of the differences in travel times of groundwater from the western edge of pond 5 to each monitoring well. (Hydrofocus Report at 4.)

[6] The proposal in the City's Report of Waste Discharge was to add two feet of clean soil, not clay, to the bottom of pond 5 to reduce the depth of mixing and to further increase the distance between the groundwater and the bottom of pond 5. This is intended to reduce the influence of groundwater on pond 5 water temperatures which will help raise oxygen-reduction potential ("ORP") and dissolved oxygen ("DO") values. Adding two feet of clean soil will also increase the depth of the vadose zone under pond 5. Pond 5 is several feet deeper than either pond 6 or pond 7 and filling a portion of pond 5 should encourage pond 5 to behave like ponds 6 and 7 neither of which exhibit low ORP nor low DO. If the City is forced to line pond 5 with clay, the project will not have sufficient disposal capacity. (Ione Report of Waste Discharge at 22; Proposed Waste Discharge Requirements Order R5-2013-XXXX Section 50.b.)

[7] See note 6.

[8] The City proposes to extend CDO compliance task timelines by approximately six months as the City believes that the first evaluation of the effectiveness of the current project is best measured in October rather than May 2014 to allow completion of one full irrigation season which should reduce groundwater mounding in the area beneath the percolation ponds. It seems prudent to allow one full year between project completion and the first assessment of project effectiveness through reductions in groundwater levels of iron and manganese. (Ione Report of Waste Discharge at 21.) Additionally, while the City, by October 2016, will ensure that its discharges are not causing mobilization of iron and manganese as required by the 2011 CDO, the groundwater impacted by past disposal practices will not be remediated within that timeframe.

[9] See note 4.

[10] See note 3.

[11] See note 4.

[12] See note 4.

[13] See note 3.

[14] The City will not be able to install the aerators in advance of the overall construction contract as the selected low-bid contractor will be supplying and installing the additional aeration capacity in treatment ponds 1-3. Given that the City will not have day-to-day control over the contractor's work schedule, the City cannot guarantee installation of the mixers on a date certain in advance of the overall project completion date. Construction on the overall project should begin in May or June 2013 with project completion by October 30, 2013 which is the deadline the City has been planning for in accordance with the 2011 CDO

[15] See note 14.

[16] The City's compliance deadline in the 2011 CDO is October 30, 2013 and all of the City's project activities have been taken and planned with that timeline in mind. The City suggests that changing the compliance deadline at this late date is difficult, at best.

[17] See note 7.

[18] See note 4.

[19] The City proposes that ranges in the reduction of iron and manganese as estimated by Dr. Steve Deverel in Hydrofocus Report Tables 3a and 3b be used to evaluate effectiveness of facility upgrades in compliance wells MW-2 and MW-2A given the uncertainty in travel times for oxidized pond water to mix with groundwater and flow down-gradient from the western edge of pond 5 to each monitoring well. (Hydrofocus Report at 6.)

[20] Since monitoring well MW-2A has yet to be constructed or sampled, it is premature to implement a percentage reduction until the well has been installed and samples retrieved. Based on the initial samples from this well, significant reductions will be assessed and submitted to the RWQCB for approval. The numbers used in the text were based on anticipated groundwater concentrations that are similar to MW-2.

[21] See note 8.

[22] This proposed date extension is for a period of less than six months because the City will need time to coordinate with Board staff and contract out the project to fill and compact the bottom two feet of pond 5. The City should know whether iron and manganese reductions fall on the reduction slopes in the Hydrofocus report by late summer 2014. The City will want to begin this work early enough to ensure the bottom of pond 5 is filled by November 30, 2014. (Hydrofocus Report at 8-9.)

[23] See note 6.

[24] See note 6.

[25] See note 6.

[26] See note 8.

[27] See notes 6 and 8.

[28] See note 4.

[29] The City proposes that ranges in the reduction of iron and manganese as estimated by Dr. Steve Deverel of Hydrofocus in Hydrofocus Report Tables 3a and 3b be used to measure the effectiveness of facility upgrades in compliance wells MW-2 and MW-2A given the potential ranges in travel time for the oxidized pond water to mix with groundwater and flow downgradient from the western edge of pond 5 to the monitoring wells. (Hydrofocus Report at 6.)

[30] See note 4.

DOCUMENT # 3

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-00XX

CEASE AND DESIST ORDER
FOR
CITY OF IONE WASTEWATER TREATMENT FACILITY
AMADOR COUNTY

TO CEASE AND DESIST
FROM DISCHARGING CONTRARY TO REQUIREMENTS

The California Regional Water Quality Control Board, Central Valley Region, (Central Valley Water Board or Board) finds that:

1. On 26 May 1995, the Central Valley Water Board adopted Waste Discharge Requirements (WDRs) Order 95-125 (the 1995 WDRs) for a wastewater treatment and disposal facility owned and operated by the City of Ione (hereafter referred to as Discharger, City of Ione, or City). On __ April 2013, the Board adopted WDRs Order R5-2012-XXXX (the 2013 WDRs) and rescinded WDRs Order 95-125 except for purposes of enforcement.

2. On 11 July 2003, the Board issued Cease and Desist Order (CDO) R5-2003-0108 (the "2003 CDO") for the City of Ione. On 8 April 2011, the Board rescinded the 2003 CDO except for purposes of enforcement, and issued CDO R5-2011-0019 (the "2011 CDO").

3. The Discharger's wastewater treatment facility (the Facility) is in Amador County in Section 26, T6N, R9E, MDB&M. The Facility accepts and treats domestic wastewater from the City of Ione, filter backwash water from a water treatment plant operated by Amador Water Agency, domestic wastewater from Preston Youth Authority's administration buildings, and filter backwash water from Castle Oaks Water Reclamation Plant. In addition, the Discharger accepts secondary effluent from Preston Reservoir for disposal in the Facility's percolation/evaporation ponds.

4. The Facility consists of seven ponds covering approximately 28 acres. The first four ponds provide secondary treatment via aeration and settling, and the remaining three ponds provide disposal of treated effluent via percolation and evaporation. Neither the sixth nor the seventh pond was permitted under the 1995 WDRs. The Facility is adjacent to Sutter Creek, with the closest pond approximately 100 feet from the Creek.

5. The unlined ponds are constructed in alluvial deposits overlaying a clay formation. Groundwater at the site and surrounding properties is very shallow (approximately 5 to 25 feet below ground surface). The Discharger has been monitoring shallow groundwater since 2002.

6. A January 2003 report submitted by the Discharger states that seepage was observed in Sutter Creek, at an estimated rate of 173 gallons/day. The report concludes that at times of very low flow, or no flow, there is the potential for groundwater to flow from the

area underlying the wastewater treatment facility into the creek[1]. It is likely that this seepage contains constituents which are present as a consequence of the treatment and discharge of waste in unlined ponds[2]. The indirect discharge (seepage) of polluted groundwater is in violation of Prohibition A.1 of both the 1995 WDRs and the 2013 WDRs.

7. Groundwater monitoring shows that the discharge of wastewater has polluted the groundwater underneath and downgradient of the facility. The main constituents of concern are iron and manganese. The background monitoring well[3] contains dissolved iron at an average concentration of 14 ug/l, while the downgradient well[4] has an average concentration of 3,800 ug/l. The secondary Maximum Contaminant Level for iron is 300 ug/l. A similar situation exists for manganese. The background well contains an average concentration of 7 ug/l of dissolved manganese, while the downgradient well[5] has an average of 5,500 ug/l, as compared to the secondary maximum contaminant level of 50. The groundwater monitoring therefore indicates that the discharges from the Facility are causing a condition of pollution in the groundwater.

8. It is unknown when the Discharger constructed wastewater disposal Pond 6. However, wastewater disposal Pond 7 was constructed in the early 2000's. The City did not submit a Report of Waste Discharge (RWD) prior to the construction or use of these ponds, which is considered a violation of WDRs Order 95-125 and the Water Code. The 2013 WDRs permit the use of these ponds.

9. At times of the year, the shallow groundwater is close to ground surface in the vicinity of the Facility. Board staff has received complaints of surfacing effluent in the vicinity of Pond 7. The City's 2010 models showed that the facility expansion proposed at that time would cause the local water table to rise as much as two feet, and would result in seasonal surfacing of wastewater at the southern end of the Facility. Surfacing wastewater would be a violation of both the 1995 WDRs and the 2013 WDRs.

2001-2003 Enforcement Actions

10. Sutter Creek flows from east to west approximately 100 feet north of the northernmost of the Facility's ponds. Beginning in September 2000, Board staff observed seepage entering the creek along the southern bank of Sutter Creek. Staff was concerned that the observed seepage was a discharge of effluent from the Facility's ponds to Sutter Creek. However, creek water analyses completed by both the Discharger and staff did not conclusively show evidence of wastewater in the seepage. During a 21 September 2001 inspection, staff observed that the Discharger had begun construction of the seventh percolation pond without submitting a Report of Waste Discharge (RWD). Staff advised the Discharger that the WDRs would have to be revised before any wastewater

---

[1] Finding No. 9 of CDO R5-2011-0019.
[2] Finding No.19 of CDO R5-2011-0019.
[3] Data obtained from MW-1 for the period of March 2009 through September 2012.
[4] Data obtained from MW-3A for the period of March 2009 through September 2012

was discharged into the pond. However, the Discharger began using the pond without obtaining regulatory coverage for the expanded facility.

11. On 9 October 2001, the Executive Officer issued an Order pursuant to Water Code section 13267 (the 13267 Order), requiring the Discharger to submit a groundwater monitoring well installation work plan by 1 December 2001; a monitoring well installation report within 60 days of Board staff's approval of the work plan; and a complete RWD (to address the new pond) by 15 April 2002. The Discharger installed the monitoring wells but did not submit the RWD.

12. On 21 January 2003, the Discharger submitted a *Hydrogeologic and Geotechnical Report*. The report documented installation of groundwater monitoring wells and provided an assessment of potential seepage to Sutter Creek. Based on the subsurface investigation, groundwater levels, and in situ hydrogeologic testing, the report stated that shallow groundwater immediately adjacent to and downgradient of the ponds exhibited increased mineral concentrations[5]. At the time of the investigation, seepage was observed in Sutter Creek[6]. The report estimated the seepage rate to be approximately 173 gallons per day[7] into the creek. The report concluded that, at times of very low flow or no flow, there is a potential for groundwater to flow from the area underlying the wastewater treatment facility to the creek[8]. The report did not include recommendations for further evaluation, nor did it propose facility improvements to stop the seepage discharge into the creek.

2003 CDO and Violations of the CDO

13. On 11 July 2003, the Central Valley Water Board issued Cease and Desist Order R5-2003-0108 (the 2003 CDO) as a result of wastewater-impacted seepage to Sutter Creek, degradation of groundwater quality, and failure to submit a RWD as required by the 13267 Order.

14. The 2003 CDO required that the Discharger come into compliance with Discharge Prohibition A.1 and the Groundwater Limitations of the 1995 WDRs no later than 30 December 2005. The 2003 CDO also required that the Discharger comply with a schedule for submittal of certain technical reports.

15. However, Discharger did not come into compliance with Discharge Prohibition A.1 of the 1995 WDRs by 30 December 2005, and therefore violated the 2003 CDO.

16. The technical studies and monitoring completed since adoption of the 2003 CDO show that the unlined treatment and disposal ponds created a localized groundwater "mound" that causes shallow groundwater beneath the Facility's ponds to flow towards Sutter

---

[5] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, page 2.
[6] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, Plate 6.
[7] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, pages 3-7.
[8] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, page 10

Creek, where it seeps into the creek channel during periods when natural flows in the creek are low.

17. The Discharger did not come into compliance with the Groundwater Limitations of the 1995 WDRs, in violation of the 2003 CDO.

18. The Discharger's groundwater monitoring data and technical reports show that the shallow groundwater contains elevated concentrations of iron and manganese downgradient of the Facility. Specifically, monitoring wells MW-2 and MW-3A are downgradient of the Facility's ponds, as well as directly adjacent to, and upgradient of, Sutter Creek. These wells consistently have dissolved iron and manganese concentrations greater than the background well. The following table summarizes dissolved iron and manganese concentrations between March 2009 and September 2012[9].

Dissolved Iron and Manganese Concentrations in Groundwater (µg/L)

	Monitoring Wells and Locations			
Constituent	**MW1 (Background)**	**MW-2 (Downgradient)**	**MW-3A (Downgradient)**	**Secondary MCL**
Dissolved Iron				
Range of Results	ND<5 to 31	25 to 2,100	ND<50 to 6,800	300
Mean Results	13.9	1,940	3 ,820	
Dissolved Manganese				
Range of Results	ND<5 to 28	3,100 to 4,600	3,000 to 6,500	50
Mean Result	6.9	3,920	5,510	

These results show that the discharge has caused dissolved iron and manganese in shallow groundwater to exceed the secondary MCLs, in violation of the groundwater limitations. Although iron and manganese are not present in the Facility's effluent at high concentrations, the presence of degradable organic matter in the wastewater depletes oxygen, which creates reducing conditions in the groundwater mound beneath the WWTF's ponds. Reducing conditions promote dissolution of iron and manganese. These minerals are naturally present in the soil beneath the ponds. This mechanism of groundwater degradation was acknowledged in the December 2009 Final EIR, which states:

> *Dissolved iron and manganese levels* [in shallow groundwater] *are likely a result of anaerobic decomposition of biological material. This decomposition occurs either in the anaerobic zone at the bottom of the existing treatment ponds or subsurface as effluent enters the groundwater at the percolation ponds.*[10]

Combined with the fact that MW-2 and MW-3A are approximately 100 feet upgradient of the portion of Sutter Creek where groundwater has been observed seeping into the creek, these data show that it is likely that the seepage contains constituents that are

---

9 Prior to 2008, groundwater samples were not filtered before analysis for metals. Without filtration to remove clay and silt particles, analytical results for metals would include any metals contained within the minerals that form the soil.

10 City of Ione Wastewater Treatment Facility Final EIR, pages 2-36.

present as a consequence of the treatment and discharge of waste in unlined ponds. The Discharger's 1995 WDRs did not allow these impacts to occur, and the Discharger was required to eliminate the processes that resulted in the discharge of polluted groundwater to the creek. This could have been accomplished by eliminating the groundwater degradation or by eliminating the seepage.

19. The Discharger did not comply with Task 8 of the 2003 CDO. Task 8 required submittal of a complete RWD with proposed improvements to bring the facility into compliance with the 1995 WDRs and the 2003 CDO. Board staff concurred that the proposed lined treatment ponds, tertiary treatment, and disinfection with ultraviolet light would greatly improve the effluent quality discharged to the percolation/evaporation ponds, which might reduce the level of groundwater degradation caused by the discharge. However, the Discharger did not show that the design would stop the seepage of degraded groundwater into Sutter Creek, and did not show that the proposed improvements would result in significantly lower concentrations of iron and manganese in the shallow groundwater.

20. The City had been in violation of its 1995 WDRs since 2001, had not complied with the 2003 CDO, and had not submitted a complete RWD. The Discharger had been unable to commit to a course of action to prevent groundwater pollution, wastewater seepage to Sutter Creek, and surfacing of wastewater. In addition, the Discharger continued to discharge wastewater to two unpermitted ponds during the entire eight year period, in violation of the 1995 WDRs.

2011 CDO and Violations of the CDO

21. As described above, the City failed to comply with the 2003 CDO. Although the Water Board had the option of assessing an administrative civil liability for the failure to comply, instead the Board chose to adopt a new CDO to provide the City with a new timeline for compliance. On 8 April 2011, the Water Board adopted CDO R5-2011-0019, which requires, in part, that the City:

    a. Address the three underlying compliance issues: groundwater pollution with iron and manganese; seepage of polluted groundwater into Sutter Creek; and the construction and use of a two unpermitted effluent disposal ponds;
    b. Submit a Seepage Discharge Compliance Plan by 30 January 2012; and
    c. Construct facility improvements that will effectively stop the mobilization and discharge of iron and manganese, and either:
        i. Stop any indirect discharge (seepage) of degraded groundwater to Sutter Creek that is in violation of the Clean Water Act; or
        ii. Obtain an NPDES Permit that regulates the indirect discharge of degraded groundwater to Sutter Creek.

22. The City chose option (i), above, and therefore the CDO required that the City submit a RWD by 30 May 2012 and then by 30 October 2013, certify that (a) the facility upgrades have been completed, (b) the facility does not discharge to Sutter Creek in violation of

the Clean Water Act, and (c) any groundwater degradation that occurs due to treatment and disposal of wastewater is consistent with State Water Board Resolution 68-16.

23. The City of Ione did not submit the RWD until 30 July 2012. Staff's review found that the RWD did not meet the criteria of the 2011 CDO, and therefore the City had failed to meet its obligation to submit a complete RWD by 30 May 2012. The Discharger subsequently submitted a revised RWD on 28 September 2012, which staff determined to be satisfactory.

2012 Administrative Civil Liability

24. On 10 September 2012, the Executive Office issued Administrative Civil Liability Complaint R5-2012-0558 for $143,552 to the City of Ione for failure to submit a complete RWD as required by the 2011 CDO. On 10 January 2013, the matter was settled when the Assistant Executive Officer signed the Final Settlement Agreement and Stipulation. The City of Ione was assessed a civil liability of $123,818. Of that amount, $61,909 was paid into the Cleanup and Abatement Account and the remaining $61,909 will be permanently suspended after the City completes an Enhanced Compliance Action (the Preston Avenue Sewer Slip Lining Project).

Rationale for 2013 CDO

25. During 2012, the City submitted multiple RWDs and participated in a number of meetings with staff to present proposed upgrades to bring the facility into compliance with the 2011 CDO and the 2003 WDRs. Because the City's proposed upgrades do not meet the timeline set forth in the 2011 CDO, this 2013 CDO is necessary to allow additional time to come into compliance with the groundwater limits and to stop the seepage of degraded groundwater to the creek. Based on the City's submittals and meetings, the information outlined below is a summary the City's proposal as it relates to groundwater quality. The City of Ione will:

    a. Construct and operate two new water recycling land application areas (LAAs), which would include an 11-acre area referred to as the WWTF Field and a 67-acre parcel known as the Town Field;

    b. Install and operate a sodium hypochlorite injection system and contact chamber for effluent disinfection prior to land application;

    c. Install and operate additional aerators in treatment Ponds 1 through 3 to achieve the horsepower shown in the table below:

Aeration Capacity

	Pond 1	Pond 2	Pond 3	Pond 4
Existing Capacity	15 HP	7.5 HP	7.5 HP	7.5 HP
Upgraded Capacity	30 HP	20 HP[1]	10 HP[2]	No change

d. Install and operate a mixer unit in Pond 5 (completed June 2012).

e. Remove anoxic soil and sludge from Pond 5 and sludge from Pond 6, and subsequently backfill and compact with clean fill to bring the bottom of these two ponds to an elevation above the seasonal high groundwater level.

f. Monitor, on a monthly basis for one year, at Ponds 5, 6, and 7 using field instruments to measure dissolved oxygen (DO), oxygen reduction potential (ORP), and sludge depths.

g. Install a new groundwater monitoring wells between Ponds 1 and 5 (completed in July 2013).[3]

h. Monitor, on a monthly basis for one year, at groundwater wells MW-2, MW-3MW-3, and the MW-2A[4] for pH, electrical conductivity (EC), DO, ORP, total dissolved solids (TDS), stable isotopes, total and fecal coliform, nitrate as nitrogen, TKN, chloride, sodium, and dissolved boron, iron and manganese. Based on the installation of the mixer and aerators, the City expects to see improvements in groundwater quality at the new well within six months, and statistically significant improvements at the downgradient wells within one year.[5]

i. If improvements in groundwater quality are not seen within one year, then 2-4 feet of clean soil[6] will be added to the bottom of Pond 5.

j. If groundwater quality is not improved after the placement of soil,[7] then the City will no longer percolate wastewater as a disposal method (either the percolation ponds will be backfilled or they will be converted to lined storage ponds).

k. As part of Phase II capacity improvements, construct a 17 million gallon clay-lined pond, remove the 11-acre WWTF Field as a LAA, and construct and operate two new LAAs (56 acres total).

26. The 2013 WDRs establish flow limits, groundwater quality limits, and effluent quality limitations, permit the use of Ponds 6 and 7, and, after improvements are made, allow the City to discharge treated wastewater to land application areas. However, the City cannot immediately comply with Prohibition A.1, Groundwater Limitation D.b, Discharge Specification E.1, or Discharge Specification E.3 of the 2013 WDRs.

a. Prohibition A.1 states: *Discharge of wastes to surface waters or surface water drainage courses is prohibited.*

b. Groundwater Limitation D.b states, in part: *Release of waste constituents from any portion of the WWTF shall not cause groundwater to… contain constituents in concentrations that exceed either the Primary or Secondary MCLs established therein.*

c. Discharge Specification E.1 states: *No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.*

d. Discharge Specification E.3 states: *Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.*

27. The 2003 CDO required that the City comply with WDRs Order 95-125, including the Prohibitions and the Groundwater Limitations in that Order, by December 2005. The City did not comply. The 2011 CDO gave the City additional time to comply with these Prohibitions and Groundwater Limitations, and set a compliance date of 30 October 2013. However, according to the City's own submittals, its current proposal will not ensure that by 30 October 2013, it will be able to make the findings required by the 2011 CDO that (a) the improvements have been constructed, (b) the facility does not discharge to Sutter Creek in violation of the Clean Water Act, and (c) any groundwater degradation is consistent with State Water Board Resolution 68-16. This 2013 CDO is being issued to ensure that, should the City's current proposal not eliminate the discharge of polluted groundwater to Sutter Creek or prevent groundwater degradation that does not meet the conditions of State Water Board Resolution 68-16, then the City will implement all appropriate actions to ensure that these conditions are resolved in an enforceable timeline.

Regulatory Considerations

28. The Central Valley Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised September 2009 (the "Basin Plan"), designates beneficial uses, includes water quality objectives to protect the beneficial uses, and includes implementation plans to implement the water quality objectives.

29. Surface water drainage from the facility is to Sutter Creek, a tributary of the Cosumnes River. The beneficial uses of the Cosumnes River, as stated in the Basin Plan, are municipal and domestic supply, irrigation, stock watering, contact recreation, canoeing and rafting, other noncontact recreation, warm and cold freshwater habitat, warm and cold migration, warm and cold spawning, and wildlife habitat.

30. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

31. Water Code section 13301 states, in relevant part:

> When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action. In the event of an existing or threatened violation of waste discharge requirements in the operation of a community sewer system, cease and desist orders may restrict or prohibit the volume, type, or concentration of waste that might be added to such system by discharges who did not discharge into the system prior to the issuance of the cease and desist order. Cease and desist orders may be issued directly by a board, after notice and hearing.

32. Water Code section 13267 (b) states:

> In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

33. The technical reports required by this Order are necessary to assure compliance with both this Order and the WDRs, and to ensure protection of public health and safety. The Discharger owns and operates the facility that discharges the waste subject to this Order.

34. Issuance of this Order is an enforcement action of a regulatory agency, and therefore, is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code § 21000 et seq.), in accordance with California Code of Regulations, title 14, section 15321(a)(2).

IT IS HEREBY ORDERED that, pursuant to Water Code sections 13301 and 13267, the City of Ione, its agents, successors, and assigns shall implement the following measures necessary to ensure long-term compliance with WDRs Order R5-2013-XXXX, or any superseding permits or orders issued by the Central Valley Water Board.

This Cease and Desist Order rescinds and replaces Cease and Desist Order R5-2011-0019 except for the purpose of enforcing violations that have occurred to date.

Any person signing a document submitted to comply with this Order shall make the following certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

1. **Effective immediately**, the Discharger shall comply with all requirements of WDRs Order R5-2013-XXXX (or subsequent WDRs that may rescind and/or replace Order R5-2013-XXXX), with the exception of Prohibition A.1 (as it relates to the discharge of degraded groundwater into Sutter Creek), Groundwater Limitation D.b, Discharge Specification E.1, and Discharge Specification E.3 as provided for in this Order, below.

2. In accordance with the time schedule set forth in this Order, the Discharger shall construct facility improvements that will effectively stop the mechanisms that result in the mobilization and discharge of iron and manganese in violation of the Groundwater Limitations of the 2013 WDRs, shall effectively stop any indirect discharge (seepage) of polluted groundwater to Sutter Creek, and shall bring the facility into compliance with the 2013 WDRs. Compliance with the WDRs and this Order must be achieved no later than **30 October 2016**.[8]

Definitions

3. The "baseline concentrations" for MW-2, MW-3MW-3[9] shall be those concentrations reported in the Fourth Quarter 2012 Groundwater Monitoring Report, which are listed in the table below. By July 2013, the Discharger will install one new groundwater monitoring well (hereafter the "new well") between Pond 5 and Pond 1. The baseline concentrations for the "new well" shall be the median of those concentrations obtained during the July through October 2013 monthly sampling events.[10]

	Baseline Concentrations for Selected Groundwater Monitoring Wells			
Constituent	**MW-2**	**MW-3**	**MW-3A**	**New Well**
Dissolved Iron (ug/L)				Note 1
Dissolved Manganese (ug/L)				Note 1

Note 1: As reported in the April 2013 groundwater monitoring report.

4. For the purposes of this Order, "significant improvement" is a defined percent reduction of the baseline concentrations for groundwater at MW-2, MW-3MW-3[11]and the new well.

5. If there is any perceived conflict between the compliance dates in the 2013 WDRs and this CDO, then the dates in this CDO take precedence.

Monitoring and Reporting

6. In addition to conducting the monitoring required by Monitoring and Reporting Program (MRP) R5-2013-XXXX, the Discharger shall:

   a. Monitor the wastewater in Ponds 5, 6, and 7 for dissolved oxygen (DO), oxygen reduction potential (ORP), temperature, and sludge depth. Samples shall be

collected at least once per month, and shall be collected and analyzed under an approved Sampling and Analysis Plan.

b. Monitor the groundwater in wells MW-2, MW-3MW-3[12]and the new well for the following minimum constituents; pH, EC, DO, ORP, TDS, dissolved iron, and dissolved manganese. Sample collection and analysis shall follow the procedures required by MRP R5-2013-XXXX.

c. Record the daily hours of operation of each aerator and mixer during the reporting period.

d. Report the results of the additional monitoring in a *CDO Monthly Monitoring Report* that is submitted by the **fifteenth day of the second month** following each calendar month (i.e., the work performed in April shall be reported by the 15th of June, and the work performed in May shall be reported by the 15th of July of each year). The monitoring reports shall meet the monitoring report requirements described in MRP R5-2013-XXXX.

e. The above monitoring shall begin during the month of **July 2013** and shall continue until this CDO is rescinded or until Ponds 5, 6, and 7 are no longer operated as percolation ponds. The first monitoring report is due on **15 September 2013**.[13]

Compliance timeline and tasks

7. **By 30October 2013**,[14] the Discharger shall submit an *Additional Aeration Report* that documents that additional aerators have been added to Ponds 1, 2, and 3 such that the aeration horsepower is at least that described in Finding 25.c, above.

8. **By 1 July 2013**,[15] the Discharger shall submit an *Anoxic Soil and Sludge Removal Work Plan* describing the removal of anoxic soil and sludge from Pond 5 and sludge from Pond 6, and the installation and compaction of clean fill to bring the bottom of these ponds above the seasonal high groundwater level identified in the WDRs. The plan shall include the proposed procedures and testing frequencies for identifying anoxic soils (e.g., field tests for ORP); procedures for soil and sludge removal, drying, and disposal; and the procedures to backfill and compact the clean fill. The plan shall include the measures to be used to control runoff or percolate from the removed material, and a schedule that shows how all dried material will be removed from the site prior to the onset of the rainy season on 1 October 2013.

9. **By 30 October 2013**[16], the Discharger shall submit a *Sludge and Anoxic Soil Removal Report*. This report shall document that the sludge and anoxic soil has been removed, disposed of at a facility permitted to accept the waste, and that clean fill has been compacted and placed to bring the bottom of these ponds to above the seasonal high groundwater level.

10. **By 30 October 2014**,[17] the Discharger shall submit the *Effectiveness of Facility Upgrades Evaluation Report #1*. The report shall evaluate whether or not the dissolved

iron concentrations in monitoring well MW-2 has been reduced by 1% to 10% while manganese concentrations in MW-2 has been reduced by 0% to 24%,[18] and dissolved iron and manganese concentrations in new well MW-2A have been reduced by approximately 40% for iron and 15%[19] for manganese from the "baseline concentrations" described in Item 3.[20] The reductions estimated for well MW-2A assume that the median and variance of manganese and iron concentrations in this well will be identical to the median and variance determined for the data collected in MW-2A. If they are different, The City will determine using statistical analysis (Mann-Kendall trend test), whether changes in concentration relative to the baseline concentration determined during July 2013 to October 2013, are statistically significant and will provide those numbers to Board staff for use in determining project efficacy. If concentrations have been reduced by this amount in each well, then the Discharger shall continue to take all appropriate actions to meet the final compliance date of 1 October 2016.[21] However, if concentrations have not been reduced as described in this paragraph, then the Discharger shall submit the report described in Item #11.

11. If it is required as a result of the *Effectiveness of Facility Upgrades Evaluation Report #1*, then by **15 August 2014**[22], the Discharger shall submit a *Pond 5 Filling*[23] *Work Plan*. This work plan shall include procedures to line the bottom 2-4 feet of Pond 5 with clean soil, the geotechnical and analytical material specifications for the soil, and the proposed source of the soil.[24] The specification shall include the proposed geotechnical tests for the source material and field tests for placement and compaction of the material. The Work Plan shall provide documentation of whether the proposed material is clean (based on analytical results) and shall include a construction quality control plan for ensuring compliance with the material specifications. The Work Plan shall also describe the hydraulic conductivity of the proposed fill material and evaluate whether the action of filling the bottom two feet of the pond with soil[25] will result in compliance with this Order by 1 October[26] 2016. In addition, the Work Plan shall include a water balance and a Report of Waste Discharge if the water balance shows that the storage and disposal capacity is less than that described in the 2013 WDRs.

12. If required to submit a *Pond 5 Fill Work Plan,* then by **30 November 2014**, the Discharger shall submit a *Pond 5 Fill Construction Report* that shall document whether the pond was filled according to an approved work plan.[27]

13. **By 30 October 2015**, the Discharger shall submit the *Effectiveness of Facility Upgrades Evaluation Report #2*. The report shall evaluate whether or not the dissolved iron concentrations in monitoring well MW-2 have been reduced by 12% to 21% while manganese concentrations in MW-2 have been reduced by 28.5% to 50.5%,[28] and dissolved iron concentrations in new well MW-2A have been reduced by 100% to background levels and dissolved manganese concentrations in MW-2A have been reduced by 37.6% to 41%[29] from the "baseline concentrations" described in Item 3. If concentrations have been reduced by this amount in each well, then the Discharger shall continue to take all appropriate actions to meet the final compliance date of 1 October 2016. MW-2MW-3MW-3However, if concentrations have not been reduced as described in this paragraph, then the Discharger shall submit the report described in Item #14.

14. If it is required as a result of the *Effectiveness of Facility Upgrades Evaluation Report #2*, then by **15 October 2015**, the Discharger shall submit a *Percolation Pond Decommissioning and Alternate Effluent Disposal Plan*. The Discharger shall either propose to install a synthetic liner in Ponds 5, 6, and 7 such that they no longer operate as percolation ponds, or shall propose to backfill the ponds and no longer use them for storage or disposal. The work plan shall include an updated water balance. If the water balance indicates that there will be insufficient capacity after percolation disposal is removed, then the Discharger shall also submit a Report of Waste Discharge. The RWD must include a proposal for additional storage and disposal sufficient to meet the flow limitations in the 2013 WDRs, and must include a schedule for implementation that meets the final compliance date (1 October 2016) of this Order.

15. By **1 November 2015**, the Discharger shall submit an *Effectiveness of Facility Upgrades Evaluation Report #3* that evaluates the reduction of dissolved iron and manganese concentrations in MW-2, MW-3MW-3,[30] and the new well, and predicts whether or not the Discharger will meet the final compliance date of 1 October 2016 in each well. If the data shows that compliance may not be achieved, then the Discharger shall propose additional steps in order to comply with the final compliance date in this Cease and Desist Order.

16. **By 30 October 2016**, the Discharger shall submit a *Final Compliance Report* which shall contain either:

    a. If the Discharger was required to submit the *Percolation Pond Decommissioning and Alternate Effluent Disposal Plan*, then the report shall show that the plan was implemented and that Ponds 5, 6, and 7 are no longer used for percolation disposal.

    b. If the Discharger was not required to decommission the percolation ponds, then the report shall certify that the Discharger fully complies with all aspects of the 2013 WDRs, and in particular, Prohibition A.1 (as it relates to the discharge of polluted groundwater into Sutter Creek), Groundwater Limitation D.b, Discharge Specification E.1, and Discharge Specification E.3.

In addition to the above, the Discharger shall comply with all applicable provisions of the Water Code that are not specifically referred to in this Order. As required by the Business and Professions Code sections 6735, 7835, and 7835.1, all technical reports shall be prepared by, or under the supervision of, a California Registered Engineer or Professional Geologist and signed/stamped by the registered professional.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement or may issue a complaint for administrative civil liability.

Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The

Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 11 April 2013.

_____

PAMELA C. CREEDON, Executive Officer

---

[1] The City's Report of Waste Discharge proposed additional aeration in ponds 1-3, based on scientific and technical evidence that would increase aeration in ponds 2 and 3 to a total of 20 HP and 10 HP respectively rather than 27.5 in pond 2 and 17.5 in pond 3 as proposed here. (Ione Report of Waste Discharge at 19.)

[2] See note 1.

[3] This new monitoring well will be denominated MW-2A and will be installed in July after the bulk of construction activity in and around pond 5 has been completed. If the City were to install the well in April 2013 as requested by Board staff there is a high likelihood that the well would be destroyed during construction as the well location is immediately west of pond 5 and is located on the main construction path. (Workplan for Installation of Groundwater Monitor Well MW-2A.) The City intends to collect samples and measure field parameters (dissolved oxygen, pH, oxidation-reduction potential and temperature) during monthly sampling events starting in July 2013. The City is concerned, however, that because the statistically significant concentration reductions of this new compliance well are based on a hypothesis of the characteristics of MW-2A that any numerical targets for concentration reduction proposed for this well be open to revision once the City obtains actual data from the well.

[4] The City proposes that because Board staff proposes to measure project success through the reduction of iron and manganese levels in groundwater through natural attenuation that only the two monitoring wells nearest to pond 5, MW-2 and MW-2A, should be used for compliance purposes. Dr. Steve Deverel of Hydrofocus drafted a "Projected Statistically Significant Manganese and Iron Concentrations in Groundwater Monitoring Wells, City of Ione WWTF" ("Hydrofocus Report") which theorizes that while groundwater travel times are relatively short for both MW-2 and MW-2A (22-325 days and 5-68 days respectively) it will take much longer for groundwater flow

to reach MW-3 and MW-3A (63-948 and 155-2322 respectively). (Hydrofocus Report at 4.) It does not seem practicable, given the potential travel times for groundwater to reach MW-3 and MW-3A, to use MW-3 and MW-3A as compliance wells.

[5] Regardless of whether two monitoring wells or four monitoring wells are used as compliance wells, the Hydrofocus Report makes clear that each monitoring well used for compliance purposes must be assessed separately for targeted reductions in future iron and manganese levels because of the differences in travel times of groundwater from the western edge of pond 5 to each monitoring well. (Hydrofocus Report at 4.)

[6] The proposal in the City's Report of Waste Discharge was to add two feet of clean soil, not clay, to the bottom of pond 5 to reduce the depth of mixing and to further increase the distance between the groundwater and the bottom of pond 5. This is intended to reduce the influence of groundwater on pond 5 water temperatures which will help raise oxygen-reduction potential ("ORP") and dissolved oxygen ("DO") values. Adding two feet of clean soil will also increase the depth of the vadose zone under pond 5. Pond 5 is several feet deeper than either pond 6 or pond 7 and filling a portion of pond 5 should encourage pond 5 to behave like ponds 6 and 7 neither of which exhibit low ORP nor low DO. If the City is forced to line pond 5 with clay, the project will not have sufficient disposal capacity. (Ione Report of Waste Discharge at 22; Proposed Waste Discharge Requirements Order R5-2013-XXXX Section 50.b.)

[7] See note 6.

[8] The City proposes to extend CDO compliance task timelines by approximately six months as the City believes that the first evaluation of the effectiveness of the current project is best measured in October rather than May 2014 to allow completion of one full irrigation season which should reduce groundwater mounding in the area beneath the percolation ponds. It seems prudent to allow one full year between project completion and the first assessment of project effectiveness through reductions in groundwater levels of iron and manganese. (Ione Report of Waste Discharge at 21.) Additionally, while the City, by October 2016, will ensure that its discharges are not causing mobilization of iron and manganese as required by the 2011 CDO, the groundwater impacted by past disposal practices will not be remediated within that timeframe.

[9] See note 4.

[10] See note 3.

[11] See note 4.

[12] See note 4.

[13] See note 3.

[14] The City will not be able to install the aerators in advance of the overall construction contract as the selected low-bid contractor will be supplying and installing the additional aeration capacity in treatment ponds 1-3. Given that the City will not have day-to-day control over the contractor's work schedule, the City cannot guarantee installation of the mixers on a date certain in advance of the overall project completion date. Construction on the overall project should begin in May or June 2013 with project completion by October 30, 2013 which is the deadline the City has been planning for in accordance with the 2011 CDO

[15] See note 14.

[16] The City's compliance deadline in the 2011 CDO is October 30, 2013 and all of the City's project activities have been taken and planned with that timeline in mind. The City suggests that changing the compliance deadline at this late date is difficult, at best.

[17] See note 7.

[18] See note 4.

[19] The City proposes that ranges in the reduction of iron and manganese as estimated by Dr. Steve Deverel in Hydrofocus Report Tables 3a and 3b be used to evaluate effectiveness of facility upgrades in compliance wells MW-2 and MW-2A given the uncertainty in travel times for oxidized pond water to mix with groundwater and flow down-gradient from the western edge of pond 5 to each monitoring well. (Hydrofocus Report at 6.)

[20] Since monitoring well MW-2A has yet to be constructed or sampled, it is premature to implement a percentage reduction until the well has been installed and samples retrieved. Based on the initial samples from this well, significant reductions will be assessed and submitted to the RWQCB for approval. The numbers used in the text were based on anticipated groundwater concentrations that are similar to MW-2.

[21] See note 8.

[22] This proposed date extension is for a period of less than six months because the City will need time to coordinate with Board staff and contract out the project to fill and compact the bottom two feet of pond 5. The City should know whether iron and manganese reductions fall on the reduction slopes in the Hydrofocus report by late summer 2014. The City will want to begin this work early enough to ensure the bottom of pond 5 is filled by November 30, 2014. (Hydrofocus Report at 8-9.)

[23] See note 6.

[24] See note 6.

[25] See note 6.

[26] See note 8.

[27] See notes 6 and 8.

[28] See note 4.

[29] The City proposes that ranges in the reduction of iron and manganese as estimated by Dr. Steve Deverel of Hydrofocus in Hydrofocus Report Tables 3a and 3b be used to measure the effectiveness of facility upgrades in compliance wells MW-2 and MW-2A given the potential ranges in travel time for the oxidized pond water to mix with groundwater and flow downgradient from the western edge of pond 5 to the monitoring wells. (Hydrofocus Report at 6.)

[30] See note 4.

DOCUMENT # 4

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2011-0019

CEASE AND DESIST ORDER
FOR
CITY OF IONE WASTEWATER TREATMENT FACILITY
AMADOR COUNTY

TO CEASE AND DESIST
FROM DISCHARGING CONTRARY TO REQUIREMENTS

The California Regional Water Quality Control Board, Central Valley Region, ("Central Valley Water Board" or "Board") finds that:

1. On 26 May 1995, the Central Valley Water Board adopted Waste Discharge Requirements Order 95-125 (the "WDRs") for a wastewater treatment and disposal facility owned and operated by the City of Ione (hereafter referred to as "Discharger").

2. The City of Ione wastewater treatment facility ("WWTF") is in Amador County in Section 26, T6N, R9E MDB&M. The WWTF treats domestic wastewater from the City of Ione, filter backwash water from a water treatment plant operated by Amador Water Agency, and domestic wastewater from Preston Youth Authority's administration buildings. In addition to treated effluent from its own treatment plant, the Discharger accepts secondary effluent from Preston Reservoir[1] for disposal in the WWTF's percolation/evaporation ponds.

3. The WWTF consists of seven unlined ponds covering approximately 28 acres. The first four ponds provide secondary treatment via aeration and settling and the remaining three ponds provide disposal of treated effluent via percolation and evaporation. The seventh pond is not permitted under the WDRs. The capacity of the treatment plant is 0.55 MGD as an average daily dry weather flow[2] and the disposal capacity is 0.75 MGD as an average daily flow[3].

4. The unlined ponds are constructed in alluvial deposits overlaying a clay formation. Groundwater at the site and surrounding properties is very shallow (approximately 5 to 25 feet below ground surface). The Discharger has been monitoring shallow groundwater since 2002.

---

1 Preston Reservoir is an effluent storage reservoir operated by the Amador Regional Sanitation Agency (ARSA). Whenever possible, this effluent receives tertiary treatment at a separate treatment plant that is operated by the City of Ione for the express purpose of providing recycled water to irrigate the Castle Oaks Golf Course. Effluent from the Preston Reservoir is only discharged to the Discharger's percolation evaporation ponds for disposal to the extent that the golf course cannot accept more recycled water.

2 City of Ione Wastewater Master Plan, June 2009.

3 Report of Waste Discharge, 22 March 2010.

5. Prohibition A.1 of the WDRs states:

   Discharge of wastes to surface waters or surface water drainage course is prohibited.

6. The Groundwater Limitations of the WDRs state:

   The discharge shall not cause the underlying groundwater to:

   1. *Be degraded.*
   2. *Contain chemicals, heavy metals, or trace elements in concentrations that adversely affect beneficial uses or exceed maximum contaminant levels specified in 22 CCR, Division 4, Chapter 15.*
   3. *Contain taste or odor-producing substance in concentrations that cause nuisance or adversely affect beneficial uses.*
   4. *Contain concentrations of chemical constituents in amounts that adversely affect agricultural use.*

2001-2003 Enforcement Actions

7. Sutter Creek flows from east to west approximately 100 feet north of the northernmost WWTF ponds. Beginning in September 2000, Board staff observed seepage entering the creek along the southern bank of Sutter Creek. Staff was concerned that the observed seepage was a discharge of effluent from the WWTF's ponds to Sutter Creek. However, creek water analyses completed by both the Discharger and staff did not conclusively show evidence of wastewater in the seepage. During a 21 September 2001 inspection, staff observed that the Discharger had begun construction of the seventh percolation pond without submitting a Report of Waste Discharge ("RWD"). Staff advised the Discharger that the WDRs would have to be revised before any wastewater was discharged into the pond. However, the Discharger began using the pond without obtaining regulatory coverage for the expanded facility.

8. On 9 October 2001, the Executive Officer issued an Order pursuant to Water Code section 13267 (the "13267 Order"), requiring the Discharger to submit technical reports, because the Discharger had not yet submitted a RWD. The 13267 Order required the Discharger to submit a groundwater monitoring well installation workplan by 1 December 2001; a monitoring well installation report by within 60 days of Board staff's approval of the workplan; and a complete RWD (to address the new pond) by 15 April 2002 . The Discharger installed the monitoring wells but did not submit the RWD.

9. On 21 January 2003, the Discharger submitted a *Hydrogeologic and Geotechnical Report*. The report documented installation of groundwater monitoring wells and provided an assessment of potential seepage to Sutter Creek. Based on the subsurface investigation, groundwater levels, and in situ hydrogeologic testing, the report stated that shallow groundwater immediately adjacent to and downgradient of the ponds exhibited increased mineral concentrations[4]. At the time of the investigation, seepage was

[4] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, page 2.

observed in Sutter Creek[5]. The report estimated the seepage rate to be approximately 173 gallons per day[6] into the creek. The report concluded that, at times of very low flow or no flow, there is a potential for groundwater to flow from the area underlying the wastewater treatment facility to the creek[7]. The report did not include recommendations for further evaluation, nor did it propose facility improvements to stop the seepage discharge into the creek.

2003 Cease and Desist Order

10. On 11 July 2003, the Central Valley Water Board issued Cease and Desist Order R5-2003-0108 (the "2003 CDO") as a result of wastewater-impacted seepage to Sutter Creek, degradation of groundwater quality, and failure to submit a RWD as required by the 13267 Order.

11. Item 1 of the 2003 CDO required that the Discharger come into compliance with Discharge Prohibition A.1 and the Groundwater Limitations of the WDRs no later than 30 December 2005. The 2003 CDO also required that the Discharger comply with a schedule for submittal of certain technical reports, as discussed below.

12. Item 6 of the 2003 CDO states:

> *By **1 January 2004**, the Discharger shall submit a Facility Guidance Document designed to address certain water quality policies, and their application to the discharge from the City of Ione's wastewater treatment plant. The document shall address both NPDES and Anti-Degradation issues, specifically:*
>
> *a. Is an NPDES permit necessary due to the seepage from the treatment/storage ponds into Ione Creek? If yes, and if the City does not desire to apply for an NPDES permit, then what modifications would the City need to make such that an NPDES permit is no longer necessary?*
>
> *b. Is the discharge complying with the directives of State Board Resolution No. 68-16 (the "Anti-Degradation Policy")? If not, what changes are necessary? If the groundwater has been degraded above background concentrations, then what reasonable Best Practicable Treatment and Control (BPTC) measures may be implemented to reduce the degradation to the extent possible? If the groundwater has been degraded above water quality objectives, what BPTC measures may be implemented to reduce the degradation to less than the objectives?*
>
> *The document shall discuss the range of alternatives for facility modifications and BPTC measures necessary to comply with State policies, and shall provide a general discussion of the pros/cons of each one, as they pertain to this facility.*

13. The Discharger submitted a Facility Guidance Document on 26 January 2004. The report stated that the preponderance of evidence from a review of other site permits and situations, as cited in the report, indicates that an NPDES permit is not needed for the Discharger's ponds; however, the report stated that many of the reviewed situations

---

[5] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, Plate 6.

[6] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, pages 3-7.

[7] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, page 10

involved disinfection of effluent, greater setbacks, or greater separations between effluent and surface water. The report suggested that the Discharger should line all ponds within 200 feet of Sutter Creek or backfill all the ponds within 200 feet. The report evaluated alternatives for facility modifications and Best Practicable Treatment and Control ("BPTC") measures, and concluded that due to the limited sampling/analysis performed for the study (i.e., one sampling event), further research should be done. The report stated that based on the results of further research, modifications to the facilities must be completed to eliminate groundwater degradation in excess of water quality objectives. Staff approved the report on 18 March 2004.

14. Item 7 of the 2003 CDO states:

> *By **30 November 2004,** the Discharger shall submit a Final Wastewater Master Plan. The master plan shall describe all facility improvements needed to:*
>
> a. *Accommodate reasonable growth projections;*
> b. *Provide for sufficient containment for the 100-year total annual precipitation event;*
> c. *Provide for appropriate maintenance schedules to ensure stable effluent disposal capacity and prevent significant erosion of Sutter Creek along the ponds;*
> d. *Reduce infiltration and inflow to acceptable levels;*
> e. *Prevent sanitary sewer overflows;*
> f. *Prevent seepage discharges to surface water (or obtain an NPDES permit to regulate those discharges); and*
> g. *Evaluate and implement Best Practicable Treatment and Control measures to ensure that any groundwater degradation complies with State Board Resolution No. 68-16.*
>
> *The master plan shall set forth a specific, detailed scope and schedule for studies, design, permitting, and construction of facility expansions and other improvements needed to comply with this Order and protect water quality.*

15. The Discharger submitted a Wastewater Master Plan on 30 November 2004, a draft Wastewater Master Plan in August 2009, and a final Wastewater Master Plan on 22 March 2010. Staff had been advised that the 30 November 2004 report was preliminary, and so did not provide comments. On 5 November 2010, staff informed the Discharger that the final Master Plan did not comply with the 2003 CDO because it did not demonstrate that the proposed WWTF modifications would prevent seepage discharges to Sutter Creek. Additionally, the final Master Plan did not include BPTC measures to mitigate the conditions that are degrading groundwater beneath the WWTF.

16. Item 8 of the 2003 CDO states:

> ***Within 60 days of staff's written approval** of the Final Wastewater Master Plan, the Discharger shall submit a Report of Waste Discharge to allow WDRs to be revised to require the implementation of the items in the Master Plan.*

17. The Discharger submitted a RWD on 1 November 2005. Between that date and September 2010, the Discharger submitted numerous revisions to the RWD, but has not

yet submitted a complete RWD that proposes facility changes that will bring the WWTF into compliance with the 2003 CDO. The history of RWD submittals is summarized below:

a. The Discharger submitted a revised RWD on 12 June 2006. In a 19 March 2007 letter, the Discharger agreed to submit a second revised RWD by 12 March 2008. However, the revised RWD was not submitted until March 2010.

b. On 22 March 2010, the Discharger submitted a RWD which proposed to replace the existing WWTF with a tertiary treatment system with UV disinfection. Treatment would take place in concrete tanks, and the four existing treatment ponds would be backfilled. The three existing percolation/evaporation ponds would continue to be used, and an additional percolation/evaporation pond would be built. The two northeastern percolation/evaporation ponds would be partially filled to provide a 200-foot setback from Sutter Creek. The project would increase the WWTF's treatment capacity to 0.8 MGD, and the disposal capacity would be increased to 0.90 MGD. The RWD stated that the project would be completed by August 2012.

c. On 28 June 2010, staff informed the Discharger that the RWD was inadequate because it would not eliminate the seepage and would likely cause additional seepage into adjacent ditches, as well as surfacing of effluent-impacted groundwater at the southern end of the WWTF site. On 17 August 2010, staff issued a Notice of Violation because the RWD was still incomplete in violation of the 2003 CDO.

d. The Discharger submitted another revision to the RWD on 7 September 2010. This submittal included the Final Environmental Impact Report ("EIR"), the Final Wastewater Master Plan, and the results of a numeric model that predicts the effects of the planned expansion on groundwater elevations and gradients. The groundwater model shows that the proposed WWTF expansion would still create seepage discharges to Sutter Creek, even with a 200-foot setback from the creek. The model also shows that the expanded facility would cause the local water table to rise as much as two feet, and would result in seasonal surfacing of groundwater at the south end of the WWTF. Neighboring landowners have already expressed concern about the high water table near the WWTF.

e. On 5 October 2010, the Discharger submitted the results of a second numeric groundwater model for the planned expansion. This model included extraction of groundwater along the southern edge of the proposed new percolation/evaporation pond to control surfacing groundwater and conveyance of the extracted groundwater to the percolation/evaporations ponds for disposal. Although the report states that the Discharger could mitigate surfacing groundwater by pumping groundwater to the WWTF ponds, the RWD's capacity analysis does not account for the additional influent flows, and the seepage to the creek was not addressed. On 5 November 2010, staff again informed the Discharger that the RWD was incomplete.

Violations of the 2003 CDO

18. In summary, the Discharger has not come into compliance with Discharge Prohibition A.1 of the WDRs by 30 December 2005, in violation of Item 1 of the 2003 CDO. The

technical studies and monitoring completed since adoption of the 2003 CDO show that the unlined treatment and disposal ponds have created a localized groundwater "mound" that causes shallow groundwater beneath the WWTF ponds to flow towards Sutter Creek, where it seeps into the creek channel during periods when natural flows in the creek are low.

19. The Discharger has not come into compliance with the Groundwater Limitations of the WDRs, in violation of Item 1 of the 2003 CDO. The Discharger's groundwater monitoring data and technical reports show that the shallow groundwater contains elevated concentrations of iron and manganese downgradient of the WWTF. Specifically, monitoring wells MW2 and MW3A are downgradient of the WWTF ponds, as well as directly adjacent to, and upgradient of, Sutter Creek. These wells consistently have dissolved iron and manganese concentrations greater than the background well (MW1). The following table summarizes dissolved iron and manganese concentrations since 2008[8]:

Dissolved Iron and Manganese Concentrations in Groundwater (µg/L)

	Monitoring Well and Location			
Constituent	**MW1 (Background)**	**MW2 (Downgradient)**	**MW3A (Downgradient)**	**Secondary MCL**
Dissolved Iron				
Range of Results	<5 to 31	25 to 2,600	<50 to 6,800	300
Mean Results	14.3	1,810	3,643	
Dissolved Manganese				
Range of Results	<5 to 28	2,600 to 4,500	5,000 to 7,200	50
Mean Result	8.3	3,704	5,832	

These results show that the discharge has caused dissolved iron and manganese in shallow groundwater to exceed the secondary MCLs, in violation of the groundwater limitations. Although iron and manganese are not present in the WWTF effluent at high concentrations, the presence of degradable organic matter in the wastewater depletes oxygen, which creates reducing conditions in the groundwater mound beneath the WWTF ponds. Reducing conditions promote dissolution of iron and manganese. These minerals are naturally present in the soil beneath the ponds. This mechanism of groundwater degradation was acknowledged in the December 2009 Final EIR, which states:

[8] Prior to 2008, groundwater samples were not filtered before analysis for metals. Without filtration to remove clay and silt particles, analytical results for metals would include any metals contained within the minerals that form the soil. As discussed further below, iron and manganese are naturally present in the soil that underlies the wastewater ponds. Therefore, any assessment of groundwater degradation should be based on filtered samples, which would contain only the metals that were already dissolved in the groundwater.

> *Dissolved iron and manganese levels* [in shallow groundwater] *are likely a result of anaerobic decomposition of biological material. This decomposition occurs either in the anaerobic zone at the bottom of the existing treatment ponds or subsurface as effluent enters the groundwater at the percolation ponds.*[9]

Combined with the fact that MW2 and MW3A are approximately 100 feet upgradient of the portion of Sutter Creek where groundwater has been observed seeping into the creek, these data show that it is likely that the seepage contains constituents that are present as a consequence of the treatment and discharge of waste in unlined ponds. The Discharger's WDRs do not allow these impacts to occur; the Discharger must eliminate the processes that result in the discharge of degraded groundwater to the creek in violation of Resolution 68-16. This could be accomplished by eliminating the groundwater degradation or by eliminating the seepage itself.

20. Despite numerous requests, the Discharger has not complied with Task 8 of the 2003 CDO, which requires submittal of a complete RWD that proposes improvements that will bring the facility into compliance with the WDRs and the 2003 CDO. Board staff concurs that the proposed tertiary treatment in lined ponds, followed by disinfection with ultraviolet light, will greatly improve the quality of the effluent discharged to the percolation/evaporation ponds, and may reduce the level of groundwater degradation caused by the discharge. However, the Discharger has not shown that the design would stop the seepage of degraded groundwater into Sutter Creek, and has not shown that the proposed improvements will result in significantly lower concentrations of iron and manganese in the shallow groundwater. Therefore, this Order requires that the Discharger demonstrate compliance with the Clean Water Act and applicable state regulations and policies, including Resolution 68-16, and to submit a new RWD that reflects the Discharger's compliance plan. In order to give the Discharger options to prevent surfacing wastewater or other impacts associated with raising the water table, this Order also allows the Discharger to propose an alternative to the proposed new percolation/evaporation pond and/or direct discharge of either groundwater or treated effluent to Sutter Creek, if the Discharger demonstrates that such discharge will comply with applicable regulations and policies.

Basis for Reduced Flow Limit

21. As discussed above, it is appropriate to issue a revised CDO because the Discharger has not complied with the 2003 CDO. Additionally, it is appropriate to restrict flows into the treatment facility and disposal ponds to that which the facility has been designed to accommodate.

22. Discharge Specification 2.1 of WDRS Order 95-125 states:

> *The monthly average dry weather discharge flow shall not exceed 1.2 million gallons/day.*

---

[9] City of Ione Wastewater Treatment Facility Final EIR, pages 2-36.

However, as noted in Finding No. 3, the Discharger's documents state that the capacity of the treatment plant is 0.55 MGD as an average daily dry weather flow, and the disposal capacity is 0.75 MGD as an average daily flow. Therefore, the flow limit that currently applies to the WWTF exceeds its actual capacity. At a minimum, the flow limit must be revised to reflect the actual treatment and disposal capacity.

23. Between September 2007 and October 2010, average monthly influent flows to the treatment plant ranged from 0.31 to 0.47 MGD and averaged 0.35 MGD, which is below the treatment capacity of 0.55 MGD. During the same period, average monthly effluent flows to the percolation/evaporation ponds ranged from 0.31 to 0.84 MGD, as compared to the disposal capacity of 0.75 MGD. The City exceeded its disposal capacity once (November 2007) and was at capacity or close to capacity five times (October 2007, December 2007, June 2009, October 2009, July 2010). For the remainder of the time, the City was significantly below its disposal capacity. The City should be able to comply with revised flow limits that reflect actual capacity.

Regulatory Considerations

24. The Central Valley Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised September 2009 (the "Basin Plan"), designates beneficial uses, includes water quality objectives to protect the beneficial uses, and includes implementation plans to implement the water quality objectives.

25. Surface water drainage from the facility is to Sutter Creek, a tributary of the Cosumnes River. The beneficial uses of the Cosumnes River, as stated in the Basin Plan, are municipal and domestic supply, irrigation, stock watering, contact recreation, canoeing and rafting, other noncontact recreation, warm and cold freshwater habitat, warm and cold migration, warm and cold spawning, and wildlife habitat.

26. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

27. Water Code section 13301 states, in relevant part:

> When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action. In the event of an existing or threatened violation of waste discharge requirements in the operation of a community sewer system, cease and desist orders may restrict or prohibit the volume, type, or concentration of waste that might be added to such system by discharges who did not discharge into the system prior to the issuance of the cease and desist order. Cease and desist orders may be issued directly by a board, after notice and hearing.

28. Water Code section 13267 (b) states:

> In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

29. The technical reports required by this Order are necessary to assure compliance with both this Order and the WDRs, and to ensure protection of public health and safety. The Discharger owns and operates the facility that discharges the waste subject to this Order.

30. Issuance of this Order is an enforcement action of a regulatory agency, and therefore, is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code § 21000 et seq.), in accordance with California Code of Regulations, title 14, section 15321(a)(2).

IT IS HEREBY ORDERED that, pursuant to Water Code sections 13301 and 13267, the City of Ione, its agents, successors, and assigns shall implement the following measures necessary to ensure long-term compliance with WDRs Order 95-125, or any superseding permits or orders issued by the Central Valley Water Board.

This Cease and Desist Order rescinds and replaces Cease and Desist Order R5-2003-0108 except for the purpose of enforcing violations that have occurred to date.

Any person signing a document submitted to comply with this Order shall make the following certification:

> *I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

1. **Effective immediately**, the Discharger shall comply with all requirements of WDRs Order 95-125 (or subsequent WDRs that may rescind and/or replace Order 95-125), except as specifically noted below.

2. In accordance with the time schedule set forth in this order, the Discharger shall construct facility improvements that will effectively stop the mechanisms that result in the mobilization and discharge of iron and manganese in violation of State Board Resolution 68-16; and either:

a. Stop any indirect discharge (seepage) of degraded groundwater to Sutter Creek that is in violation of the Clean Water Act; or

b. Obtain an NPDES Permit that regulates the indirect discharge of degraded groundwater to Sutter Creek.

If the Discharger demonstrates that a direct discharge to surface water will comply with current regulations and policies applicable to surface water discharges, then either option above may include obtaining an NPDES permit for seasonal or year round direct surface water discharge of treated effluent and/or groundwater that has been degraded as a result of the existing land discharge.

3. By **30 January 2012**, the Discharger shall submit a *Seepage Discharge Compliance Plan*. At a minimum, the plan shall:

a. Specify the selected seepage compliance option, as described in Item 2, above.

b. Provide a conceptual design of the facility improvements required to achieve compliance with this Order and provide sufficient treatment, storage and disposal capacity through 2020.

c. Describe how the improvements/expansion project will be designed to prevent surfacing groundwater or increases in groundwater levels that could adversely impact neighboring land uses.

d. Provide a proposed scope and schedule of all work required for complete implementation of the selected option. The schedule shall include planning, predesign studies, CEQA compliance, project financing, engineering design, permitting, contractor procurement, construction, and startup testing.

e. Provide a preliminary capital cost estimate and a financing plan describing how the improvement project will be funded.

4. **If the selected seepage discharge compliance option does not require an NPDES permit**, the Discharger shall comply with the following requirements:

a. By **30 May 2012**, the Discharger shall submit an RWD or apply for revised WDRs. The RWD shall, at a minimum, address the items listed in Attachment A.

b. If requested by the Executive Officer, the Discharger shall submit a revised RWD that addresses staff's comments within **45 days** of the request.

c. By **30 October 2013**, the Discharger shall submit a technical report certifying that (1) the improvements/expansion project has been completed, (2) the facility does not discharge to Sutter Creek in violation of the Clean Water Act, and (3) any groundwater degradation that occurs due to treatment and disposal of wastewater is consistent with State Water Board Resolution 68-16.

5. **If the selected seepage discharge compliance option requires an NPDES permit** for either direct discharge or continued seepage discharge, the Discharger shall comply with the following requirements:

   a. By **30 January 2012,** the Discharger shall submit and implement a *Pre-Application Monitoring Plan* designed to provide all groundwater and surface water monitoring data required to support the NPDES permit application. The monitoring plan shall specify the media to be monitored, sampling locations and schedule, constituents to be analyzed, and proposed analytical methods. If flow monitoring data is needed to support a request for dilution credits, the monitoring plan shall also specify the proposed flow monitoring method, location, and schedule.

   b. If requested by the Executive Officer, the Discharger shall submit a revised *Pre-Application Monitoring Plan* that addresses staff's comments within **45 days** of the request.

   c. By **30 August 2012**, the Discharger shall submit a complete RWD to apply for an NPDES permit and revised WDRs for the wastewater treatment facility. The RWD shall, at minimum, address the items listed in Attachments A (for the land discharge WDRs) and B (for the NPDES permit).

   d. If requested by the Executive Officer, the Discharger shall submit a revised RWD that addresses staff's comments within 14 **days** of the request.

   e. By **30 March 2013**, the Discharger shall submit a technical report certifying that the improvements/expansion project has been completed and that any discharges to surface water, whether direct or indirect, are regulated under a valid NPDES permit.

Interim Flow Limits

6. Influent flows to the wastewater treatment plant shall not exceed 0.55 MGD as a monthly average dry weather flow (based on flows from June through September each calendar year). Total effluent flows to the percolation/evaporation ponds shall not exceed 0.75 MGD as a monthly average flow for any calendar month. For the purpose of this Order, total effluent flow is defined as the sum of the monthly average treatment plant effluent flow plus the monthly average effluent flow accepted from the ARSA system which is directed to the percolation/evaporation ponds.

Quarterly Progress Reporting

7. Beginning **1 August 2011**, and by the first day of the second month following each calendar quarter **(i.e., by 1 February, 1 May, 1 August, and 1 November each year)**, the Discharger shall submit a quarterly progress report describing: (a) the work completed to date regarding each of the reporting requirements described above; (b) a cumulative total since April 2011 of the number of new connections that have been permitted and the number of connections that have been removed from the collection

system in terms of equivalent single family dwelling units (EDUs); and (c) data showing whether or not the Discharger has complied with the interim flow limits contained in this Order.

In addition to the above, the Discharger shall comply with all applicable provisions of the Water Code that are not specifically referred to in this Order. As required by the Business and Professions Code sections 6735, 7835, and 7835.1, all technical reports shall be prepared by, or under the supervision of, a California Registered Engineer or Professional Geologist and signed/stamped by the registered professional.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement or may issue a complaint for administrative civil liability.

Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 8 April 2011.

-- Original signed by---

PAMELA C. CREEDON, Executive Officer

Attachment A Additional Information Requirement for a Report of Waste Discharge (Land Discharge Permits)
Attachment B Application Requirements for NPDES Permits

DOCUMENT # 5

WORK PLAN
INSTALLATION OF GROUNDWATER MONITOR WELL MW-2A

City of Ione Wastewater Treatment Plant
Ione, Amador County, California

Prepared for
City of Ione
PO Box 398
Ione, CA 95640-0398

Prepared by
Condor Earth Technologies, Inc.
21663 Brian Lane
Sonora, CA 95370
209.532.0361

February 1, 2013
Condor Project No. 5554L

Copyright © 2013, Condor Earth Technologies, Inc.
All Rights Reserved

CONDOR

TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 PURPOSE 1
3.0 SITE DESCRIPTION 1
4.0 LOCAL GEOLOGIC SETTING 1
5.0 HYDROLOGY 1
6.0 SCOPE OF WORK 1
6.1 DRILLING PROCEDURES 2
6.2 MONITOR WELL CONSTRUCTION 2
6.3 MONITOR WELL DEVELOPMENT 2
6.4 MONITOR WELL ELEVATION SURVEY 2
6.5 MONITOR WELL SAMPLING 2
7.0 HEALTH AND SAFETY PLAN 3
8.0 REPORTING 3
9.0 SCHEDULE 3
10.0 LIMITATIONS AND SIGNATURE 3

APPENDICES

APPENDIX A
Figure 1 Vicinity Map
Figure 2 Site Map
Figure 3 Typical Well Construction Diagram

CONDOR

WORK PLAN
INSTALLATION OF GROUNDWATER MONITOR WELL MW-2A

City of Ione Wastewater Treatment Plant
Ione, Amador County, California

1.0 INTRODUCTION

This is a Work Plan for the installation of one groundwater monitor well MW-2A at the City of Ione (City) Wastewater Treatment Plant (WWTP) in Ione, California. The site location is shown on Figure 1, Vicinity Map. Condor Earth Technologies, Inc. (Condor) prepared this Work Plan at the request of Ed Pattison, Ione City Manager, to comply with the January 14, 2013, letter from the California Central Valley Regional Water Quality Control Board (Regional Board) and groundwater reporting requirements in the Revised Monitoring and Reporting Program (MRP) No. 95-125, dated May 14, 2003. The WWTP is owned and operated by the City. This report is provided to the City for submittal to the Regional Board for review and concurrence.

2.0 PURPOSE

The purpose of proposed well MW-2A is to monitor groundwater quality adjacent to Pond 5 following planned facility upgrades. A Site Map indicating the proposed well location is shown on Figure 2.

3.0 SITE DESCRIPTION

The site is located in Ione Valley at the south corner of the intersection between Marlette Street and Old Stockton Road. The topography slopes toward the west slightly and varies from approximately 265 feet to 278 feet above mean sea level (msl). The surrounding properties are primarily agriculture. A residential neighborhood is located adjacent to the northeast corner of the site and Sutter Creek forms the north boundary of the WWTP. The approximately latitude is 38.35 north and longitude 120.95 west. The site location and topography are shown on Figure 1.

4.0 LOCAL GEOLOGIC SETTING

The project site lies within the Ione Valley of the Great Valley Geomorphic province. The Ione Valley is an alluvial valley incised by Sutter Creek. Previous investigations indicate that the subsurface soils are generally clayey or sandy silt to a depth of 9 to 14 feet that grade to silty sands, gravelly sands, and sandy gravels. The granular material is in sharp contact with orange to tan, relatively stiff clay of the Ione Formation at depths ranging from 24 to 29 feet.

5.0 HYDROLOGY

The groundwater gradient upstream and downstream from the WWTP and adjacent to Sutter Creek is down valley (west) and parallel to Sutter Creek. At the WWTP, a groundwater mound is noted below Ponds 5, 6, and 7. The mound results in a relatively flat gradient east (upgradient) of the ponds and relatively steep gradient under the western edge of Pond 3. The average overall site gradient is 0.004 ft./ft.

6.0 SCOPE OF WORK

Condor will oversee the installation, construction, development and sampling of one groundwater monitor well at the proposed location shown on Figure **2**. The work will be performed in compliance with the

January 14, 2013, letter from the Regional Board and groundwater reporting requirements in the Revised Monitoring and Reporting Program (MRP) No. 95-125, dated May 14, 2003.

6.1 DRILLING PROCEDURES

The ground surface elevation at the proposed well locations is 278 feet msl. In the vicinity of Pond 5, historical groundwater surface elevation data at nearby monitor well MW-2 and piezometer P-3 range from 257 feet to 264 feet msl. The anticipated depth to water is approximately 14 to 21 feet. The monitor well MW-2A borehole will be drilled to a total depth of 25 feet.

The drilling services will be provided by a California Licensed C57 contractor under permit from the Amador County Environmental Health Department. The borehole will be drilled using 8- to 10-inch diameter, continuous flight, hollow-stem augers. The augers will be steam-cleaned before use. Soil samples will be collected from the ground surface and at 5-foot intervals thereafter to the borehole total depth using either a California modified split-spoon or a standard penetration test split-spoon. During the sampling, the split-spoon will be driven ahead of the auger. The soils will be logged according to the Unified Soil Classification under the supervision of a geologist registered in the State of California. The geological log will include such field observations as soil type, color, odor, estimated moisture content, and grain size distribution. The soil cuttings from the boring will be spread on site at a location identified by the City. No laboratory analyses are planned for the soil samples.

6.2 MONITOR WELL CONSTRUCTION

The well will be constructed with 10 feet of 2-inch nominal, Schedule 40, flush threaded PVC casing, and 15 feet of 0.020 inch, machine slotted screen fitted with a flush threaded PVC bottom cap. A sand pack of No.2/12 sand will be placed in the annulus to at least 2 feet above the well screen. Dry bentonite pellets will be placed above the sand and hydrated with potable water to form a 2- to 3-foot thick protective seal. The remainder of the annulus will be filled to just below grade with neat cement. A locking, flush-mount, traffic rated, well monument surrounded by an approximately 2- to 4-foot square concrete pad will be installed at the ground surface around the well. A typical monitor well construction diagram is shown on Figure 3.

6.3 MONITOR WELL DEVELOPMENT

The well will be developed within 48 hours of construction by surging, bailing and pumping. Development will continue until the discharge water is relatively clear to the unaided eye and the temperature, electrical conductivity and pH of the water have stabilized. Prior to use, all well-development equipment will be cleaned by washing in a solution of laboratory-grade, non-phosphate detergent and potable water, and double rinsing with potable water. The purge water will be discharged to the most convenient WWTP pond near the well. Well development records and parameter readings will be recorded during the field work.

6.4 MONITOR WELL ELEVATION SURVEY

A licensed land surveyor will survey the well using a datum from the existing monitor well network. The top of the well casing and the adjacent ground surface will be surveyed within an accuracy of 0.01-foot and the horizontal position within an accuracy of 0.1-foot.

6.5 MONITOR WELL SAMPLING AND LABORATORY ANALYSES

The monitor well will be included in the existing network of groundwater wells. Monitoring procedures, frequency, and laboratory analyses will occur in accordance with MRP No. 95-125.

7.0 HEALTH AND SAFETY PLAN

A site specific Health and Safety Plan will be completed and present on-site during all drilling activities. All field personnel will be required to read and sign the Health and Safety Plan prior to commencing with field work.

8.0 REPORTING

A monitor well installation report and sampling results will be prepared for submission to the Regional Board and Amador County Environmental Health Department. The report will include a discussion of the site history, a description of the fieldwork and laboratory analyses, a scaled site plan, geological log, well construction diagram, and recommendations, as warranted. A licensed professional responsible for the work will endorse the report.

9.0 SCHEDULE

Condor can begin work within approximately 2 weeks following concurrence on this Work Plan by the Regional Board and authorization to proceed from the City. Prior to commencement of fieldwork, Condor will obtain a drilling permit from the Amador Environmental Health Department. The Underground Service Alert will be notified at least 48 hours prior to the field work. A monitor well installation report will be completed within approximately 8 weeks following the completion of the fieldwork.

10.0 LIMITATIONS AND SIGNATURE

This report has been prepared under the direct supervision of a Certified Engineering Geologist in the State of California. The standard of care for all services performed or furnished by Condor is the care and skill ordinarily used by members of the environmental profession practicing under similar conditions at the same time in the same locality. Condor is not responsible for the accuracy and completeness of information collected and developed by others.

This Work Plan was prepared for the sole use of the City, and may not be used or relied upon by any other person(s) without the express written consent and authorization of the City and Condor. If any changes are made or errors found in the information used for this report, the interpretations and conclusions contained herein shall not be considered valid unless the changes or errors are reviewed by Condor and either appropriately modified or re-approved in writing. Any questions regarding the content of this document should be addressed to Ed Pattison, Ione City Manager, or to Marc R. Crum of Condor at 209.532.0361.

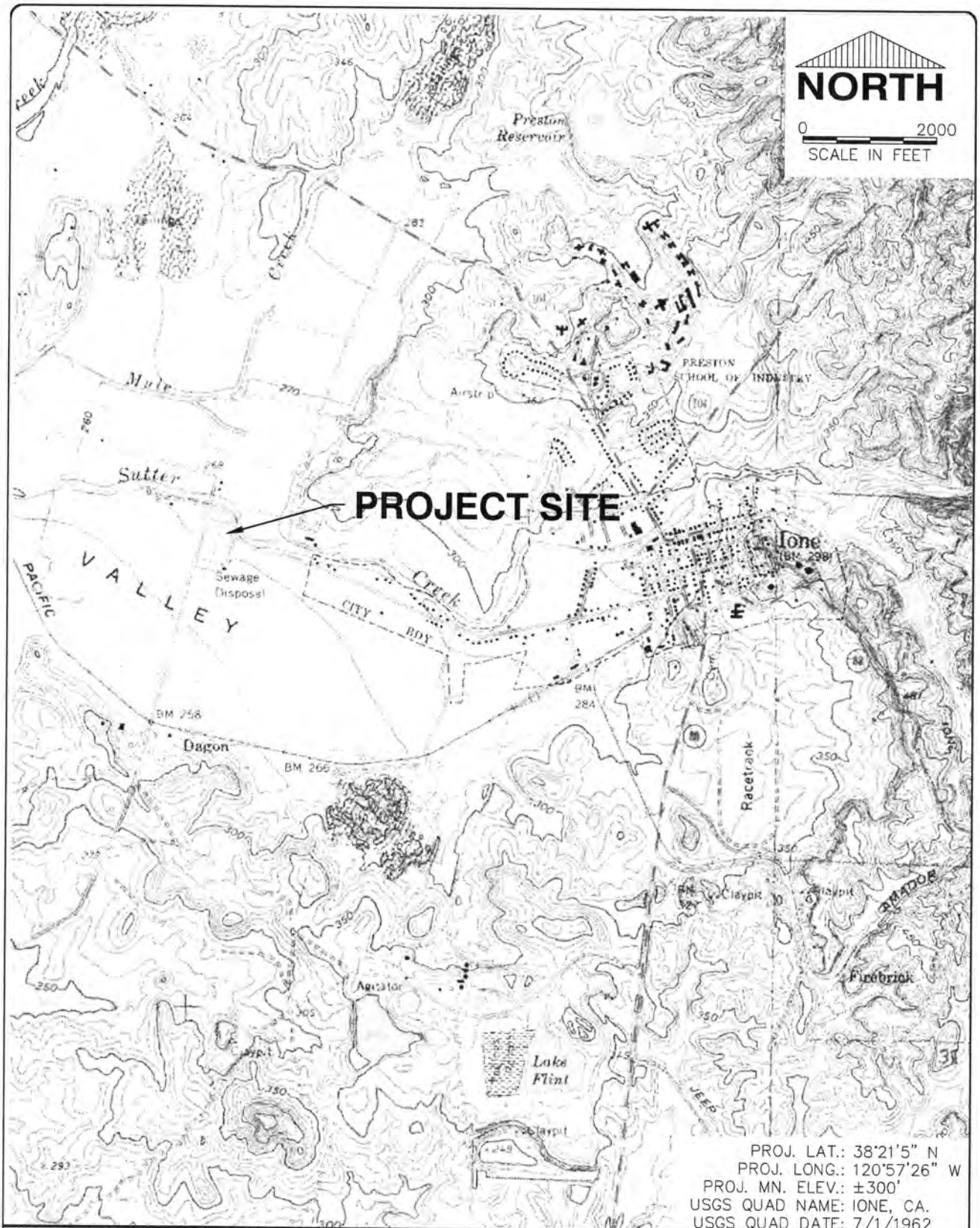
Respectfully submitted,
CONDOR EARTH TECHNOLOGIES, INC.

Marc R. Crum
Certified Engineering Geologist No. 2254

P:\5000_prj\5554 Ione GWmonitoring\5554L Pond 5 Well\Reports\WP 20130201 Pond 5 MW.docx

CONDOR

APPENDIX A



CONDOR EARTH TECHNOLOGIES, INC.
21663 Brian Lane
P.O. Box 3905
Sonora, CA 95370
(209) 532-0361
fax (209) 532-0773
www.condorearth.com
CONDOR®

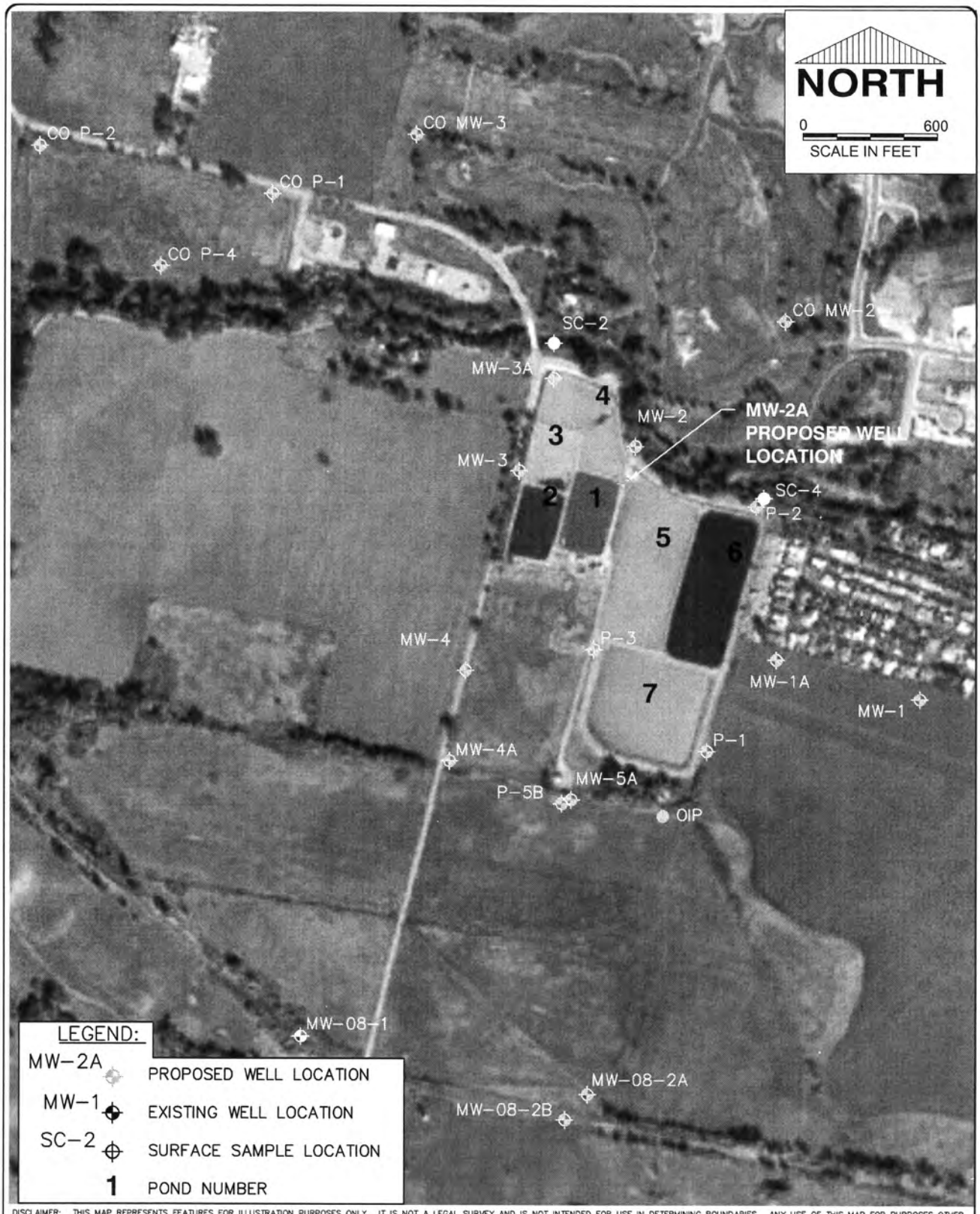
Job No.	5554D
Published Date	4 APRIL 2012
Scale	AS SHOWN
Drawn / Chk'd	MTM / MC

VICINITY MAP
GROUNDWATER MONITORING WELL SAMPLING
CITY OF IONE
REGIONAL WASTEWATER TREATMENT PLANT
IONE, CALIFORNIA

FIGURE 1

File No. 5554D-F1

C:\Users\jmontgomery\appdata\local\temp\AcPublish_7104\5554D-F1.dwg 7-27-12 11:31:33 AM jmontgomery



DISCLAIMER: THIS MAP REPRESENTS FEATURES FOR ILLUSTRATION PURPOSES ONLY. IT IS NOT A LEGAL SURVEY AND IS NOT INTENDED FOR USE IN DETERMINING BOUNDARIES. ANY USE OF THIS MAP FOR PURPOSES OTHER THAN FOR APPROXIMATE LOCATION OF FEATURES IS DONE SO AT THE USER'S RISK AND WITHOUT THE CONSENT OF CONDOR EARTH TECHNOLOGIES, INC.

CONDOR EARTH TECHNOLOGIES, INC.
21663 Brian Lane
P.O. Box 3905
Sonora, CA 95370
(209) 532-0361
fax (209) 532-0773
www.condorearth.com
CONDOR®

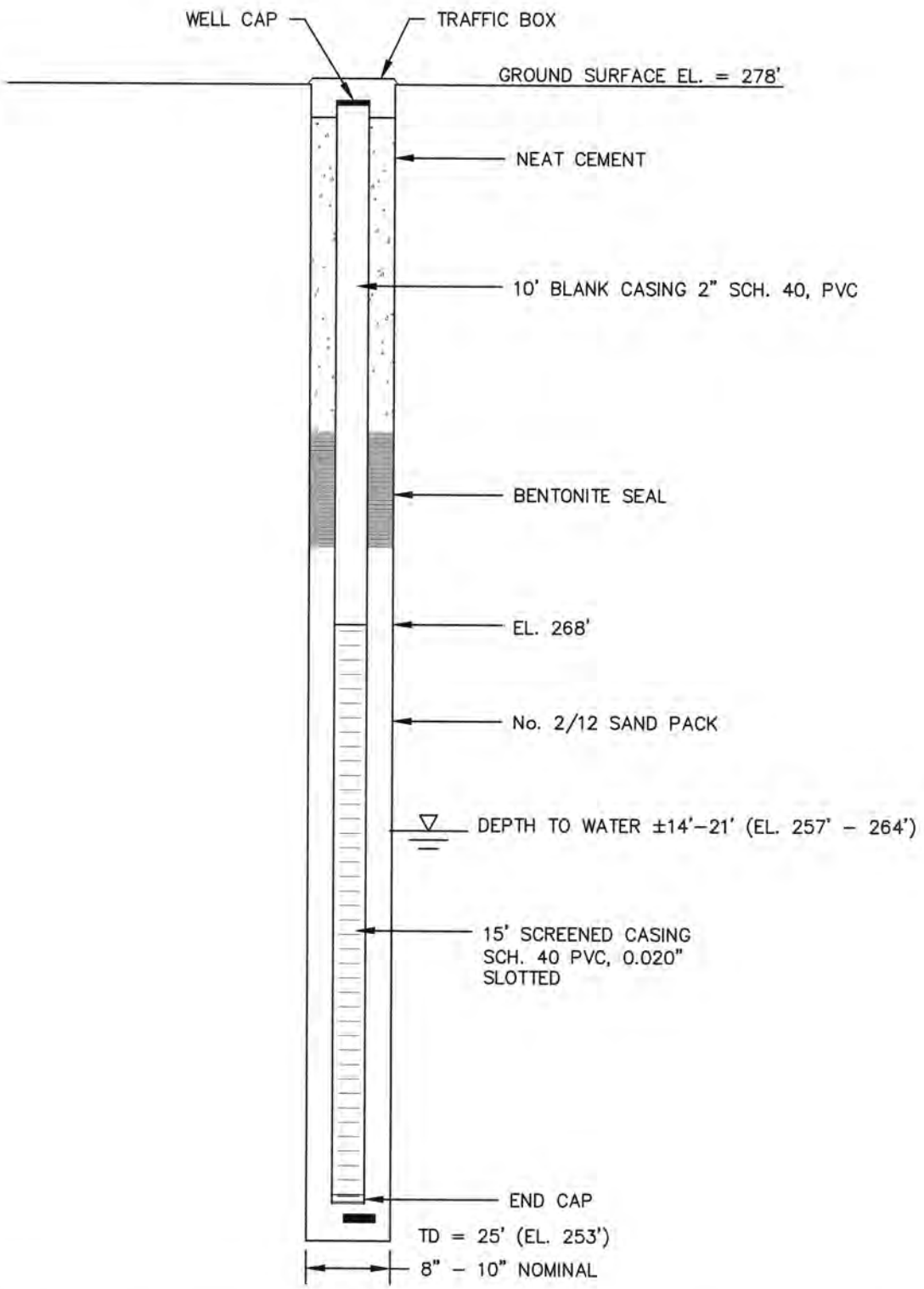
Job No.	5554L
Published Date	29 JAN. 2013
Scale	AS SHOWN
Drawn / Chk'd	MTM / MC

SITE MAP
PROPOSED WELL LOCATION
CITY OF IONE
REGIONAL WASTEWATER TREATMENT PLANT
IONE, CALIFORNIA

FIGURE 2

File No. 5554L_F1-F3

P:\5000_prj\5554 Ione GWmonitoring\5554L Pond 5 Well\5554L_CAD\DWG\FIGURES\5554L_F1-F3.dwg 1-31-13 08:53:07 AM jmontgomery



CONDOR EARTH TECHNOLOGIES, INC.
2166.3 Brian Lane
P.O. Box 3905
Sonora, CA 95370
(209) 532-0361
fax (209) 532-0773
www.condorearth.com
CONDOR®

Job No.	Published Date	Scale	Drawn	Chk'd
5554L	09 JAN. 2012	AS SHOWN	JDM	MRC

TYPICAL MONITOR WELL
CITY OF IONE
REGIONAL WASTEWATER TREATMENT PLANT
IONE, CALIFORNIA

FIGURE 3

File No. 5554L_F1-F3

P:\5000_prj\5554 Ione GWmonitoring\5554L Pond 5 Well\5554L_CAD\DWG\FIGURES\5554L_F1-F3.dwg 1-31-13 08:53:09 AM jmontgomery

DOCUMENT # 6

Projected Statistically Significant Manganese and Iron Concentration Changes in Monitoring Wells, City of Ione, Wastewater Treatment Plant

HydroFocus, Inc., March 4, 2013

Introduction and Background

There is substantial evidence for chemically reducing conditions owing to anoxic sludge in the bottom of pond 5 as the cause for elevated iron and manganese concentrations in groundwater monitoring wells MW2, MW3 and MW3A (Figure 1). The following bullets summarize the evidence for this process which was presented in the HydroFocus Seepage Analysis Report[1] and Assessment of Oxidation-Reduction Conditions in Percolation Ponds[2] .

- Water isotope data show that water samples collected from wells MW2, MW3 and MW3A which have elevated concentrations of iron and manganese contained large percentages (over 64%) of water from the percolation ponds (primarily Pond 5).
- The oxidation-reduction potential (ORP) values for these wells were lower than other wells that had low iron and manganese and were significantly lower than background.
- The ORP values for wells MW2, MW3 and MW3A were consistent with theoretical values for iron oxy-hydroxide reduction to ferrous iron (-5 mV, Stumm and Morgan[3]). Also, median ORP values were lower than the theoretical value of 230 mV for manganous oxide reduction to divalent (and more soluble) manganese.
- Collection and analysis of sludge samples from Pond 5 demonstrated that there is sufficient chemical reduction capacity in the sludge to reduce the oxygen in this pond and result in reduction and increased solubility of manganese and iron present in soils and aquifer materials.
- Surface water quality data from Pond 5 show highly chemically reducing conditions near the pond bottom.

The proposed strategy for reducing groundwater manganese and iron concentrations in groundwater is to remove sludge from and aerate Pond 5. This will provide oxygenated water for oxidation and precipitation of reduced forms of iron and manganese and thus reduce their concentrations in monitoring wells. HydroFocus[4] compared iron and manganese oxidation kinetics to travel times. In the presence of oxygen and near neutral pH reduced forms of iron and manganese oxidize within minutes. These oxidized forms rapidly precipitate and thus reduce concentrations of dissolved iron and manganese in groundwater[5].

---

[1] HydroFocus, Inc.,2012, Seepage Analysis, City of Ione Wastewater Treatment Plant, Final Report

[2] HydroFocus, Inc., 2012, Draft Assessment of Oxidation-Reduction Conditions in Percolation Ponds, Ione Wastewater Treatment Facility, Prepared for GHD and The City of Ione.

[3] Stumm, W. and Morgan, J.J., 1981, Aquatic Chemistry: An Introduction Emphasizing Chemical Equilibria in Natural Waters, 2nd Edition, New York: John Wiley & Sons, Inc.

[4] HydroFocus, Inc.,2012, Seepage Analysis, City of Ione Wastewater Treatment Plant, Final Report

[5] Singer, P.C. and Stumm, W., 1970, Acid mine drainage--the rate limiting step: Science, v. 167, p. 1121-1123 . Morgan, J.J., 2000, Manganese speciation and redox kinetics in natural waters, Chemical speciation and

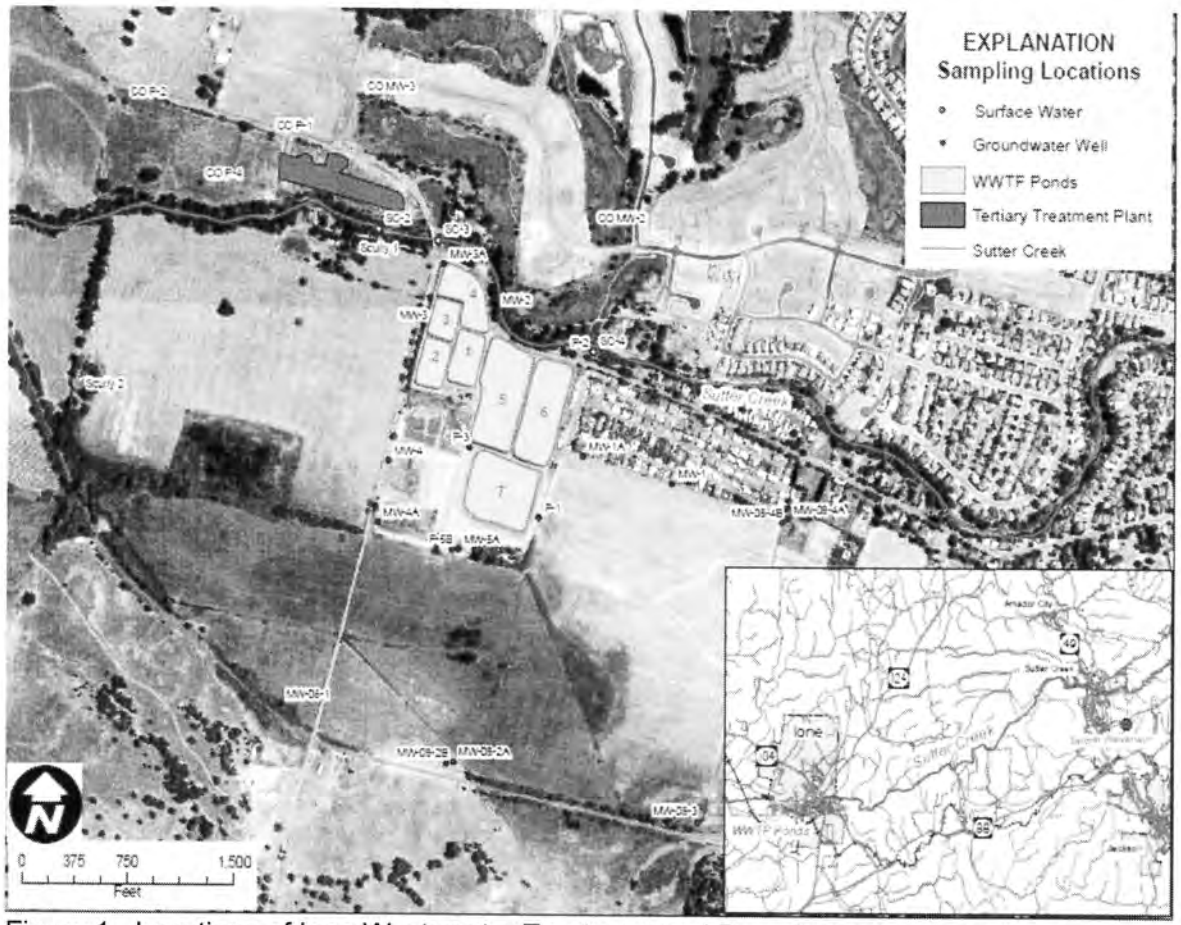


Figure 1. Locations of Ione Wastewater Treatment and Percolation Ponds and Monitoring Wells.

reactivity in water chemistry and water technology, a symposium in honor of James J. Morgan, American Chemical Society, Washington, D.C.

We herein describe estimates of statistically significant temporal changes in groundwater iron and manganese concentrations in wells MW2, MW3 and MW3A and a new well (MW2a) west of Pond 5 after removing the sludge from and aerating the bottom of Pond 5. Specifically, we determined the minimum value for significant rates for concentration decreases relative to the dissolved manganese and iron concentration data for these wells collected since 2007. We also estimated a range of travel times from the edge of pond 5 to the individual wells using measured hydraulic gradients and estimated values for hydraulic conductivity and porosity.

Methods and Data Sources

The groundwater velocities from Pond 5 to the monitoring wells were determined using Darcy's Law where groundwater velocity is equal to the hydraulic conductivity multiplied by the hydraulic gradient divided by the effective porosity. The distance divided by the velocity equals the travel time. The well logs indicate substantial heterogeneity in hydraulic conductivity values. Subsurface texture ranges from sand with silt to gravel. Freeze and Cherry[6] suggest a range of hydraulic conductivity values of 28 to 280 feet/day for these subsurface textures. For comparison, Condor Earth Technologies used a hydraulic conductivity value of 180 feet/day in a groundwater flow model.[7] We assumed an effective porosity ranging from 0.2 to 0.3 based on values in Todd.[8] The average hydraulic gradient, the change in groundwater level elevation divided by the distance between Pond 5 the wells was calculated from Condor Earth Technologies' quarterly water level measurements during 2011. We estimated the groundwater elevation beneath the ponds from contoured data.

We used the non-parametric Mann-Whitney rank-sum test[9] to estimate the potential temporal changes in manganese and iron concentrations necessary to result in a statistically significant difference between concentrations before and after pond sludge removal and aeration scheduled for October 2013. Specifically, we iteratively compared the before data set for dissolved iron and manganese concentrations through December 2012 with a synthetic data set of concentrations commencing after the estimated travel time from Pond 5 to wells MW2, MW3 and MW3a. We also developed a synthetic data set for the new well, MW2a proposed for installation adjacent to Pond 5 assuming that the data to be collected from July 2013 through October 2013 would be identical in central tendency and variance to the data collected in MW2. For iron concentrations for wells MW2 and MW3a, we conducted our analysis without outliers[10]. We used the 95 % confidence interval to determine significance.

---

[6] Freeze, R. Allen and Cherry, J.A., 1979, Groundwater, Prentice Hall

[7] Condor Earth Technologies, 2010, Groundwater modeling report

[8] Todd, D.K., 1980, Groundwater Hydrology, John Wiley and Sons

[9] Helsel, D.R. and Hirsch, R.M., 1992, Statistical Methods in Water Resources, Elsevier. These authors describe the use of t non-parametric rank-sum or Mann-Whitney test for determining significant differences in time varying concentrations during before and after changes that can affect hydrologic or water quality data. We used Minitab software to calculate the Mann-Whitney statistics.

[10] For MW2 and MW3A outlier values were reported on 3/12, 6/16, and 9/22 2009. Values ranged from non-detect (less than 0.05 mg/L) to 0.38 mg/L. Median values for iron concentrations for these wells were 2.5 and 4.4 mg/L for MW2 and MW3a, respectively. Our assessment of the data indicate that these outliers are laboratory reporting errors because the low values were reported for both wells on the same days and values are one to two orders of magnitude less than remaining values and the median. Also, oxidation-reduction potential

In each case, we assumed a linear downward trend and iteratively arrived at the minimum concentration decrease per month that resulted in a statistically significant difference at the 95 % confidence interval between the before and after concentrations. We then extended the time series to estimate a range of times required for 25, 50 and 75% reduction in concentrations.

Results

Travel Time Estimates

Using the range of hydraulic conductivity values resulted in travel times ranging from 5 to 2,320 days (Table 1). The lowest hydraulic conductivity value of 28 feet per day and highest porosity of 0.3 resulted in a travel time estimates ranging from 63 to 2,322 days. The highest hydraulic conductivity value and lowest porosity resulted in travels time estimates ranging from 5 to 155 days. For the new well MW2a, we used an average of the velocities for the other wells to estimate travel times.

Table 1. Estimated Range of Travel Times from the western edge of Pond 5 to monitoring wells.

Well	Distance (feet)	Hydraulic gradient	Min Velocity (ft/day)	Max Velocity (ft/day)	Minimum Estimated travel time (days)	Maximum Estimated travel time (days)
MW-2	244.5	0.008	0.75	11.28	22	325
MW-3A	839.2	0.004	0.36	5.42	155	2,322
MW-3	670.3	0.008	0.71	10.61	63	948
New	41.5				5	68

Estimated Temporal Concentration Changes

Table 2 shows the estimated minimum concentration change per month necessary to result in a statistically significant difference between concentrations before and after Pond 5 sludge removal and aeration and after the estimated time for groundwater to travel from Pond 5 to the well. Variations in estimated times reflect variations in travel times shown in Table 1. For MW2, the closest existing well to pond 5, our analysis shows that the minimum statistically significant change in manganese concentrations would result in 25%, 50% and 75% decreases within 1.8, 2.8 and 3.7 years, respectively. For manganese in MW3, we estimated concentration decreases of 25%, 50% and 75% within 5.4, 8.3 and 11.2 years, respectively. For MW 3A which is the well furthest from Pond 5, we estimated

---

values and dissolved oxygen concentrations were consistent with the remaining measurements and therefore do not indicate changes in the well chemistry that could result in these drastic changes. We conducted the statistical analysis with and without outliers. Removing the outliers from the MW3a time series changed the minimum slope from -0.08 mg/L per month to -0.04 mg/l per month. For MW2, the slope with outliers was -0.03 mg/l per month and without outliers was -0.02 mg/L per month.

manganese concentration decreases of 25%, 50% and 75% within 9.4, 12.4 and 15.4 years, respectively. In the new well, MW2a, we estimated concentration decreases of 25%, 50% and 75% within 1.4, 2.6 and 3.9 years, respectively.

Table 2a. Estimated times for statistically significant changes on 25, 50 and 75% in manganese concentrations for monitoring wells.

Dissolved Constituent	Well	Estimated decrease (mg l^{-1} mo^{-1})	p value	Years after October 2013 to decrease concentrations by 25% (concentrations in mg/L in parentheses)	Years after October 2013 to decrease concentrations by 50% (concentrations in mg/L in parentheses)	Years after October 2013 to decrease concentrations by 75% (concentrations in mg/L in parentheses)
Manganese	MW2A (new well)	0.07	0.032	1.3 – 1.4 (3.1)	2.5 -2.6 (2.0)	3.7 – 3.9 (1.0)
Manganese	MW2	0.09	0.035	1.0 - 1.8 (3.1)	2.0 -2.8 (2.0)	2.9 -3.7 (1.0)
Manganese	MW3	0.03	0.018	3.0 - 5.4 (3.1)	5.8 - 8.3 (2.0)	8.8 - 11.2 (1.0)
Manganese	MW3A	0.04	0.028	3.4 - 9.4 (4.3)	6.4 - 12.4 (2.9)	9.4 - 15.4 (1.5)

Table 2b. Estimated statistically significant changes in iron concentrations for monitoring wells.

Dissolved Constituent	Well	Estimated decrease (mg l^{-1} mo^{-1})	p value	Years after October 2013 to decrease concentrations by 25% (concentrations in mg/L in parentheses)	Years after October 2013 to decrease concentrations by 50% (concentrations in mg/L in parentheses)	Years after October 2013 to decrease concentrations by 75% (concentrations in mg/L in parentheses)
Iron	MW2a (New well)	0.10	0.044	0.5 – 0.7 (1.7)	0.9 – 1.1 (1.1)	1.4 – 1.6 (0.6)
Iron	MW2	0.03	0.0214	1.6 - 2.4 (1.7)	3.1 - 4.0 (1.1)	4.6 - 5.5 (0.6)
Iron	MW3A	0.05	0.0386	2.3 - 8.3 (3.4)	4.2 - 10.1 (2.3)	6.1 - 12.0 (1.1)

For iron, we estimated 25%, 50% and 75% iron concentration decreases for MW2 would occur within 2.4, 4.0, 5.5 years (Table 2b). For MW3a, we estimated that these concentration decreases would occur within 8.3, 10.1 and 12 years. In the new well MW2a, assuming the time series prior to changes to the ponds will be similar in central tendency and variance to MW2, we estimated that concentrations will decrease by 25, 50 and 75 % by 0.7, 1.1 and 1.6 years.

Table 3 shows the estimated range in concentrations and percent changes for manganese and iron in October 2014 and 2015. In the new well, MW2a, we estimated a decline of 17 – 22% in manganese concentrations would occur by October 2014 and a 29 - 51 % decline would occur by October 2015 assuming that the central tendency and variance of the data is similar to MW 2. In MW 2, we estimated that manganese concentrations will decline to 3.1 – 4.0 mg/L (0– 24 %) by October 2014. By October 2015, we estimated that concentrations would decline to 2.0 – 2.9 mg/L or 29 – 51 %. Estimated changes in MW3 and MW 3A will occur

more slowly due to the longer distances from Pond 5. We expect maximum changes in MW3 of 7.3 and 16 % by October 2014 and 2015. Similarly in MW 3A, we estimated maximum changes of 4.9 and 13.2 % by October 2014 and 2015

For iron (Table 3b), we estimated that in MW2, iron concentrations will decline to 2.0 to 2.2 mg/L (1 - 10 %) by October 2014. By October 2015, we estimated that concentrations would decline to 1.7 to 1.9 mg/L or 12 – 21 %. We estimated maximum changes in MW3A of 7.6 and 21 % by October 2014 and 2015. For the new well MW2a, we estimated that by October 2013, concentrations would decline to 1.0 – 1.2 (45 – 55%) by October 2014. By October 2015, concentrations would decline to less than the current laboratory reporting limit. These estimates assume that the central tendency and variance of the data collected in MW2a will be similar to MW2.

Table 3a. Estimated manganese concentrations and percent changes by October 2014 and 2015.

Well	Constituent	Estimated manganese concentration in mg/L with percent decline in parentheses		Median Value (2007-2012)
		October 2014	October 2015	
MW2	Manganese	3.11 - 4.1 (0 – 24.2%)	2.09 - 2.93 (28.5 – 50.5%)	4.10
MW3	Manganese	3.80 - 4.10 (0 - 7.3%)	3.44 - 4.1 (0 – 16.1%)	4.10
MW3A	Manganese	5.47 - 5.75 (0 – 4.87%)	4.99 - 5.75 (0 – 13.8%)	5.75
MW2A (new well)	Manganese	3.26 – 3.40 (17.1 – 20.5%)	2.42 -2.56 (37.6 – 41%)	4.10 (estimated)

Table 3b. Estimated iron concentrations and percent changes by October 2014 and 2015.

Well	Constituent	Estimated iron concentration in mg/L with percent decline in parentheses		Median Value (2007 – 2012)
-	-	October 2014	October 2015	
MW-2A (new well)	Iron	1.00 – 1.20 (45 – 55%)	ND (100%)	2.2 (estimated)
MW2	Iron	1.98 - 2.18 (1 - 10%)	1.74 - 1.94 (12 – 21%)	2.2
MW3A	Iron	4.28 - 4.63 (0 - 7.6%)	3.68 - 4.63 (0 – 20.5%)	4.63

The reductions specified in Tables 2 and 3 are greater than the maximum contaminant levels (MCL) and background as represented by MW1. For dissolved manganese and iron, MCLs are 0.05 and 0.3 mg/L for dissolved iron and manganese, respectively. The mean of background dissolved manganese and iron concentrations in well MW1 are 0.0083 and 0.0143 mg/L, respectively. We estimated the time for groundwater concentrations to decrease to these levels based on our statistical analysis (Table 4). We estimated that manganese concentrations will decrease to the MCL in wells MW2A, MW2, MW3 and MW3A within 5, 4.6, 13.9 and 18.3 years, respectively. To decrease to background, we estimated that 5.1, 4.7, 14 and 18.4 years will be required for MW2, MW3 and MW3A. For iron, we estimated that concentrations would decrease to the MCL within 2, 8.9 and 13.6 years in MW2A, MW2 and MW3A. We estimated that concentrations would decrease to background within 2.0, 10.1 and 14.1 years for MW2A, MW2 and MW3A.

Table 4a. Estimated time (in years) for dissolved manganese concentrations to decrease to the MCL (0.05 mg/L and mean background concentration (0.008 mg/L)

Dissolved Constituent	Well	Years after October 2013 to decrease concentrations by MCL	Years after October 2013 to decrease concentrations to background
Manganese	MW2A (new well)	4.9 -5.0	4.9 – 5.1
Manganese	MW2	3.8 – 4.6	3.9 – 4.7
Manganese	MW3	11.4 – 13.9	11.6 – 14.0
Manganese	MW3A	12.4 – 18.3	12.5 – 18.4

Table 2b. Estimated time (in years) for dissolved iron concentrations to decrease to the MCL (0.3 mg/L and mean background concentration (0.0143 mg/L)

Dissolved Constituent	Well	Years after October 2013 to decrease concentrations by MCL	Years after October 2013 to decrease concentrations to background levels
Iron	MW2A (new well)	1.8 – 2.0	1.9 – 2.0
Iron	MW2	8.0 - 8.9	9.2 – 10.1
Iron	MW3A	7.7 – 13.6	8.2 – 14.1

Figures 2 through 6 show the measured and estimated future manganese and iron concentrations for MW2, MW3 and MW3a. The two estimates of future concentration (green and red lines) reflect the range of estimated travel times from Pond 5 to the wells.

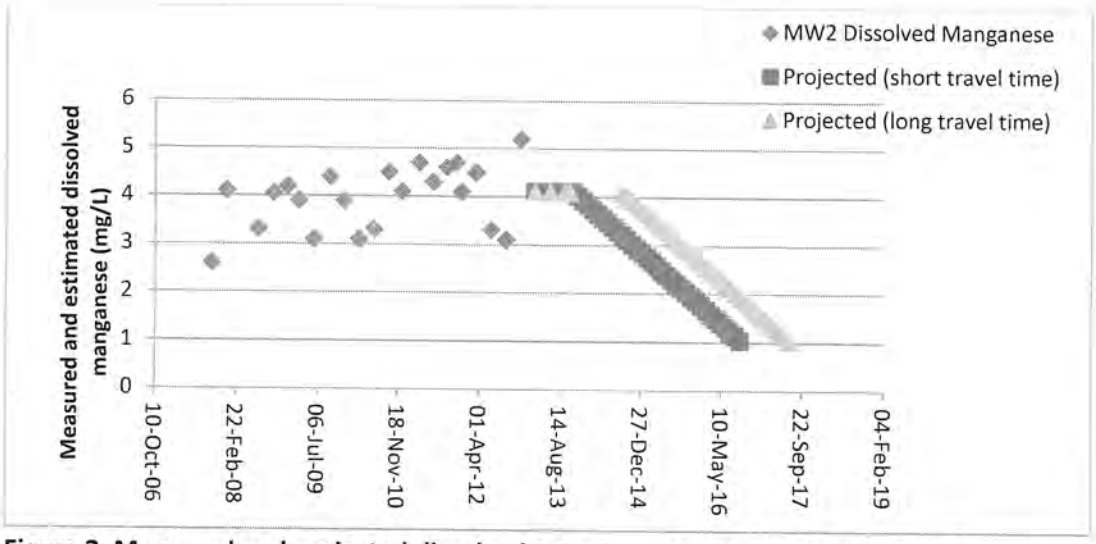


Figure 2. Measured and projected dissolved manganese concentrations for MW2.

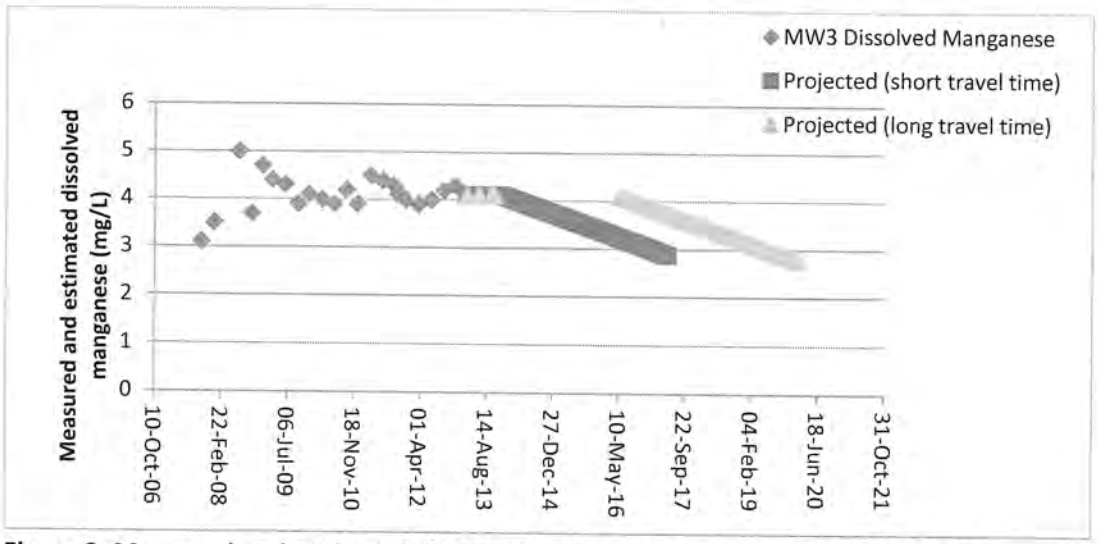


Figure 3. Measured and projected dissolved manganese concentrations for MW3.

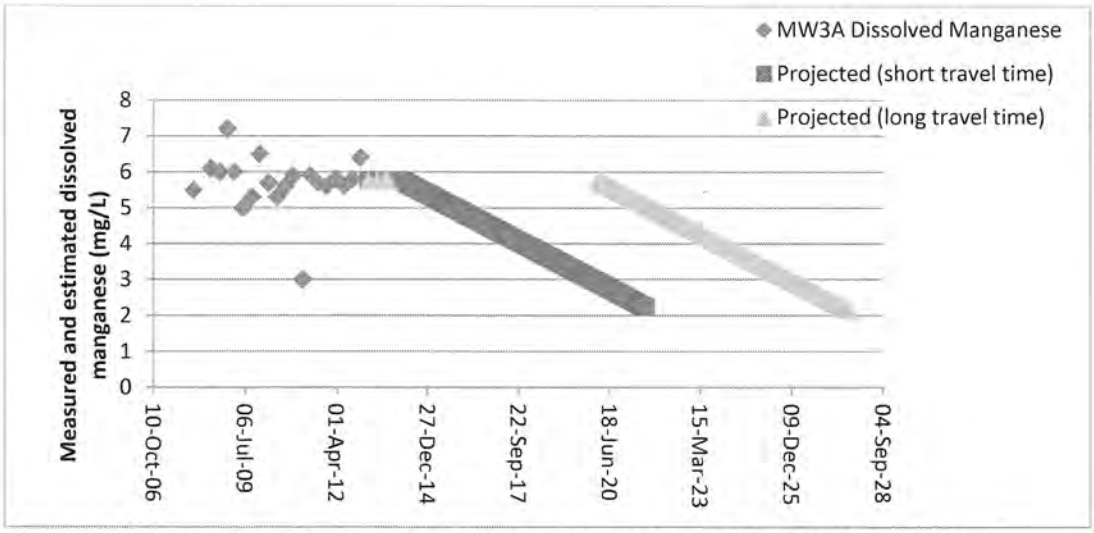


Figure 4. Measured and projected dissolved manganese concentrations for MW3a.

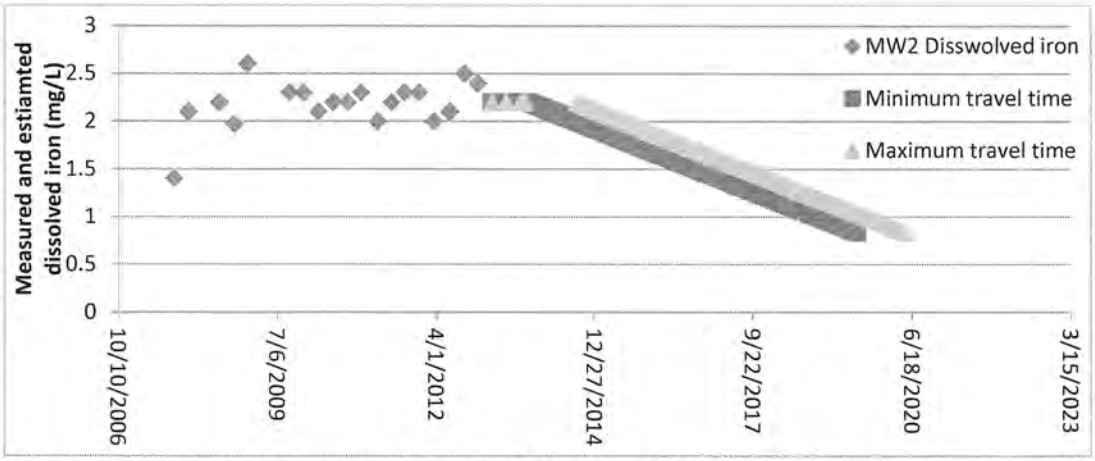


Figure 5. Measured and projected dissolved iron concentrations for MW2.

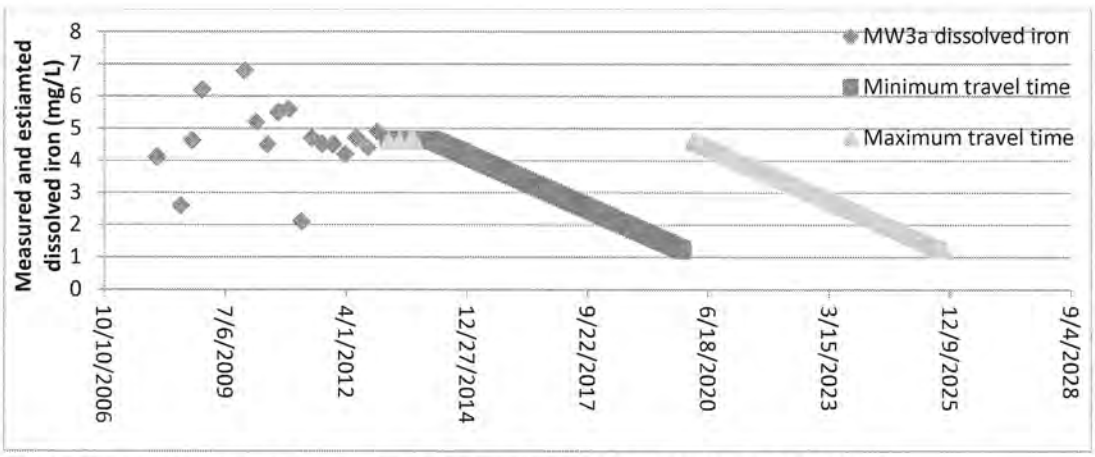


Figure 6. Measured and projected dissolved iron concentrations for MW3a.

DOCUMENT # 7

James D Maynard

From: Wyels, Wendy@Waterboards
Sent: Friday, February 01, 2013 1:16 PM
To: Christopher Sanders (cms@eslawfirm.com); James D Maynard (jmaynard@jamesmaynardlaw.com); Ed Pattison (epattison@ione-ca.com) (epattison@ione-ca.com)
Cc: Pulupa, Patrick@Waterboards; Olson, Anne@Waterboards; Boyd, Mary@Waterboards; Fu, Lixin@Waterboards
Subject: Administrative Draft WDRs and CDO

James and Cris,
As discussed with Pamela today, I am transmitting the administrative draft of the WDRs and companion CDO for the City of Ione. Please provide any comments by 5:00 pm on Monday, February 4th. The documents will be released for public review by close of business on Tuesday, February 5th and will be scheduled for consideration at the Board's 11/12 April 2013 meeting.

If you have any questions, feel free to contact me.

Wendy Wyels
Supervisor, Compliance and Enforcement Section
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670
(916) 464-4835

From: Fu, Lixin@Waterboards
Sent: Friday, February 01, 2013 10:07 AM
To: Wyels, Wendy@Waterboards
Cc: Olson, Anne@Waterboards
Subject: WDRs for Ione

Wendy,

The Tentative WDRs are attached.

Thanks,

Lixin Fu, P.E.

Water Resources Control Engineer
WDR Land Discharge Permitting Unit
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670
Desk 916-464-4689
Fax 916-464-4780
lfu@waterboards.ca.gov

DOCUMENT # 8

James D Maynard

From: Christopher Sanders
Sent: Monday, February 04, 2013 5:00 PM
To: Creedon, Pamela@Waterboards
Cc: Wyels, Wendy@Waterboards; James D Maynard; Ed Pattison
Subject: Ione comments to Draft WDRs and Draft CDO

Dear Ms. Creedon,

Enclosed are the initial comments of the City of Ione on the administrative drafts of the waste discharge requirements and cease and desist order. We still believe a meeting with staff to discuss suggested changes would be productive prior to release of the documents for public comment. However, we believe any meeting, either before or after release of the document, would prove fruitful to correct the document and make changes that would allow the City to support the efforts of Board staff at the April meeting. We also suggest that the Board consider withdrawing the issuance of the CDO until these discussions occur

Please contact me if you have any questions.

chris

Christopher M. Sanders
Ellison, Schneider & Harris L.L.P.
2600 Capitol Avenue, Suite 400
Sacramento, CA 95816
(916) 447-2166
mailto:cms@eslawfirm.com
www.eslawfirm.com

DOCUMENT # 9

ELLISON, SCHNEIDER & HARRIS L.L.P.

ANNE J. SCHNEIDER
1947-2010

CHRISTOPHER T. ELLISON
JEFFERY D. HARRIS
DOUGLAS K. KERNER
ROBERT E. DONLAN
ANDREW B. BROWN
GREGGORY L. WHEATLAND
CHRISTOPHER M. SANDERS
LYNN M. HAUG
PETER J. KIEL

ATTORNEYS AT LAW
2600 CAPITOL AVENUE, SUITE 400
SACRAMENTO, CALIFORNIA 95816
TELEPHONE: (916) 447-2166
FACSIMILE: (916) 447-3512
http://www.eslawfirm.com

BRIAN S. BIERING
KATHRYN C. COTTER
JEDEDIAH J. GIBSON
CHASE B. KAPPEL
SHANE E. C. McCOIN
SAMANTHA G. POTTENGER

OF COUNSEL:
ELIZABETH P. EWENS
MARGARET G. LEAVITT
RONALD LIEBERT

February 4, 2013

Ms. Pamela Creedon
Executive Officer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, No. 200
Rancho Cordova, California 95670

RE: Comments to Draft WDRs and Draft CDO, City of Ione WWTF

Dear Ms. Creedon,

On behalf of the City of Ione, thank you for the opportunity to provide comments to both the draft waste discharge requirements ("WDRs") and the draft cease and desist order ("CDO") that the Regional Water Quality Control Board ("RWQCB" or "Board") intends to propose for adoption at the April 2013 RWQCB Meeting. After reviewing these documents, we hope the RWQCB takes us up on our offer to meet and discuss potential changes to these documents before the documents are publicly noticed. We believe this meeting would be particularly helpful because we believe there are both errors and misunderstandings within the documents that could and should be clarified before publication. We also believe that had the City of Ione had any opportunity to review these documents during their development, these problems could have been avoided.

Comments to Draft WDRs

Our general comments to the draft WDRs are that staff seems to have done a very good job of capturing the components of the report of waste discharge. We have provided our specific comments in redline format in an attached document. The one specific comment of particular note is that the proposed WDRs have the requirement to complete the Phase II expansion by October 2015, regardless of influent flow. This is not what Ione transmitted in its report of waste discharge and not what it agreed to with the Board staff. We have provided some suggested language that establishes the fact that Ione will begin operation well under the Phase I capacity and that suggests a path for requiring the City to begin planning and designing Phase II when we hit a flow limit, not a hard date. This flow limit trigger would be sufficiently well in advance of the need for the facility, which we hope would alleviate the concerns of the Board.

Comments to Draft CDO

For purposes of the draft CDO, we have prepared both general and specific comments to the document. Some of these comments are addressed as suggested edits to the proposed CDO (proposed changes in redline format in an attached document). Other comments to the draft CDO are included below.

1. The draft CDO is unnecessary.

The draft CDO is unnecessary because the existing CDO, from 2011, adequately regulates the facility to ensure compliance with the WDRs. To the extent that the Board believed additional timelines are necessary to ensure groundwater remediation, this could have been accomplished with a time schedule order within the WDRs.

2. The draft CDO proposes mandates that are not in accordance with the report of waste discharge and without any technical basis.

The draft CDO has proposed a remediation schedule based upon a remediation effectiveness assessment of 25% after one year and 75% after two years. There does not appear to be any basis for either the 25% or 75% effectiveness assessment. Furthermore, the effect of this assessment within the CDO is to mandate implementation of additional actions that were not proposed within the report of waste discharge, were never discussed with Board staff and are technically infeasible. An additional problem with this methodology is that the percent reduction is being used to assess remediation effectiveness and mandate potential changes to the treatment storage and disposal system, regardless of whether the system is effective in preventing any future groundwater degradation.

3. The draft CDO has modified the compliance schedule of the 2011 CDO to require earlier compliance.

The draft CDO requires compliance with some aspects of the program proposed for compliance earlier than the October 30, 2013 deadline of the existing CDO (e.g. monitoring well installation and increased power for aerators). The draft CDO compounds this issue by requiring an assessment of the facility upgrades by May 1, 2014 (compliance timeline and tasks, page 12). Since the 2011 CDO requires compliance by October 30, 2013, and Draft Finding No. 25(h) acknowledges that the City expects to see statistically significant improvements at the downgradient wells within one year of the proposed upgrades, this should entail the assessment of facility upgrades to be due more than one year after October 30, 2013, not May 1, 2014.

4. The draft CDO makes findings that are not accurate.

The draft CDO makes several findings where there is no supporting documentation for the findings, such as claims of surfacing wastewater and wastewater flow into Sutter Creek. These should be removed.

These comments represent a sampling of the issues we have primarily with the draft CDO, but also the draft WDRs. However, the City of Ione has indicated an interest in working Board staff to achieve compliance and believes that most, if not all, of these issues can be resolved with

Board staff if we are given the opportunity to meet with staff to discuss these concerns. We look forward to that opportunity should it become available.

Again, thank you for the opportunity to comment.

Sincerely,

Christopher M. Sanders

DOCUMENT # 10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-00XX

CEASE AND DESIST ORDER
FOR
CITY OF IONE WASTEWATER TREATMENT FACILITY
AMADOR COUNTY

TO CEASE AND DESIST
FROM DISCHARGING CONTRARY TO REQUIREMENTS

The California Regional Water Quality Control Board, Central Valley Region, (Central Valley Water Board or Board) finds that:

1. On 26 May 1995, the Central Valley Water Board adopted Waste Discharge Requirements (WDRs) Order 95-125 (the 1995 WDRs) for a wastewater treatment and disposal facility owned and operated by the City of Ione (hereafter referred to as Discharger, City of Ione, or City). On __ April 2013, the Board adopted WDRs Order R5-2012-XXXX (the 2013 WDRs) and rescinded WDRs Order 95-125 except for purposes of enforcement.

2. On 11 July 2003, the Board issued Cease and Desist Order (CDO) R5-2003-0108 (the "2003 CDO") for the City of Ione. On 8 April 2011, the Board rescinded the 2003 CDO except for purposes of enforcement, and issued CDO R5-2011-0019 (the "2011 CDO"). Because the City's proposed upgrades will not result in the immediate improvement of the degraded groundwater, this 2013 CDO is necessary to allow additional time to come into compliance with the groundwater limits and to stop the potential seepage of degraded groundwater to the creek.

3. The Discharger's wastewater treatment facility (the Facility) is in Amador County in Section 26, T6N, R9E, MDB&M. The Facility accepts and treats domestic wastewater from the City of Ione, filter backwash water from a water treatment plant operated by Amador Water Agency, domestic wastewater from Preston Youth Authority's administration buildings, and filter backwash water from Castle Oaks Water Reclamation Plant. In addition, the Discharger accepts secondary effluent from Preston Reservoir for disposal in the Facility's percolation/evaporation ponds.

4. The Facility consists of seven ponds covering approximately 28 acres. The first four ponds provide secondary treatment via aeration and settling, and the remaining three ponds provide disposal of treated effluent via percolation and evaporation. Neither the sixth nor the seventh pond was permitted under the 1995 WDRs. The Facility is adjacent to Sutter Creek, with the closest pond approximately 100 feet from the Creek.

5. The unlined ponds are constructed in alluvial deposits overlaying a clay formation. Groundwater at the site and surrounding properties is very shallow (approximately 5 to 25 feet below ground surface). The Discharger has been monitoring shallow groundwater since 2002.

6. A January 2003 report submitted by the Discharger states that seepage was observed in Sutter Creek, at an estimated rate of 173 gallons/day. The report concludes that at times of very low flow, or no flow, there is the potential for groundwater to flow from the area underlying the wastewater treatment facility into the creek[1]. It is likely that this seepage contains constituents which are present as a consequence of the treatment and discharge of waste in unlined ponds[2]. The indirect discharge (seepage) may be ~~of polluted groundwater is~~ in violation of Prohibition A.1 of both the 1995 WDRs and the 2013 WDRs.

7. Groundwater monitoring shows that the discharge of wastewater has polluted the groundwater underneath and downgradient of the facility. The main constituents of concern are iron and manganese. The background monitoring well[3] contains dissolved iron at an average concentration of 14 ug/l, while the downgradient well[4] has an average concentration of 3,800 ug/l. The secondary Maximum Contaminant Level for iron is 300 ug/l. A similar situation exists for manganese. The background well contains an average concentration of 7 ug/l of dissolved manganese, while the downgradient well[5] has an average of 5,500 ug/l, as compared to the secondary maximum contaminant level of 50. The groundwater monitoring therefore indicates that the discharges from the Facility are causing a condition of pollution in the groundwater.

8. It is unknown when the Discharger constructed wastewater disposal Pond 6. However, wastewater disposal Pond 7 was constructed in the early 2000's. The City did not submit a Report of Waste Discharge (RWD) prior to the construction or use of these ponds, which is considered a violation of WDRs Order 95-125 and the Water Code. The 2013 WDRs permit the use of these ponds.

9. At times of the year, the shallow groundwater is close to ground surface in the vicinity of the Facility. Board staff has received complaints of surfacing effluent in the vicinity of Pond 7. The City's 2010 models showed that the facility expansion proposed at that time would cause the local water table to rise as much as two feet, and would result in seasonal surfacing of ~~wastewater~~ groundwater at the southern end of the Facility. Surfacing wastewater would be a violation of both the 1995 WDRs and the 2013 WDRs.

2001-2003 Enforcement Actions

10. Sutter Creek flows from east to west approximately 100 feet north of the northernmost of the Facility's ponds. Beginning in September 2000, Board staff observed seepage entering the creek along the southern bank of Sutter Creek. Staff was concerned that the observed seepage was a discharge of effluent from the Facility's ponds to Sutter Creek. However, creek water analyses completed by both the Discharger and staff did not conclusively show evidence of wastewater in the seepage. During a 21 September

---

[1] Finding No. 9 of CDO R5-2011-0019.
[2] Finding No.19 of CDO R5-2011-0019.
[3] Data obtained from MW-1 for the period of March 2009 through September 2012.
[4] Data obtained from MW-3A for the period of March 2009 through September 2012.

2001 inspection, staff observed that the Discharger had begun construction of the seventh percolation pond without submitting a Report of Waste Discharge (RWD). Staff advised the Discharger that the WDRs would have to be revised before any wastewater was discharged into the pond. However, the Discharger began using the pond without obtaining regulatory coverage for the expanded facility.

11. On 9 October 2001, the Executive Officer issued an Order pursuant to Water Code section 13267 (the 13267 Order), requiring the Discharger to submit a groundwater monitoring well installation work plan by 1 December 2001; a monitoring well installation report within 60 days of Board staff's approval of the work plan; and a complete RWD (to address the new pond) by 15 April 2002. The Discharger installed the monitoring wells but did not submit the RWD.

12. On 21 January 2003, the Discharger submitted a *Hydrogeologic and Geotechnical Report*. The report documented installation of groundwater monitoring wells and provided an assessment of potential seepage to Sutter Creek. Based on the subsurface investigation, groundwater levels, and in situ hydrogeologic testing, the report stated that shallow groundwater immediately adjacent to and downgradient of the ponds exhibited increased mineral concentrations[5]. At the time of the investigation, seepage was observed in Sutter Creek[6]. The report estimated the seepage rate to be approximately 173 gallons per day[7] into the creek. The report concluded that, at times of very low flow or no flow, there is a potential for groundwater to flow from the area underlying the wastewater treatment facility to the creek[8]. ~~The report did not include recommendations for further evaluation, nor did it propose facility improvements to stop the seepage discharge into the creek.~~

2003 CDO and Violations of the CDO

13. On 11 July 2003, the Central Valley Water Board issued Cease and Desist Order R5-2003-0108 (the 2003 CDO) as a result of wastewater-impacted seepage to Sutter Creek, degradation of groundwater quality, and failure to submit a RWD as required by the 13267 Order.

14. The 2003 CDO required that the Discharger come into compliance with Discharge Prohibition A.1 and the Groundwater Limitations of the 1995 WDRs no later than 30 December 2005. The 2003 CDO also required that the Discharger comply with a schedule for submittal of certain technical reports.

15. ~~However, Discharger did not come into compliance with Discharge Prohibition A.1 of the 1995 WDRs by 30 December 2005, and therefore violated the 2003 CDO.~~

---

[5] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, page 2.
[6] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, Plate 6.
[7] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, pages 3-7
[8] Wallace Kuhl Associates, Hydrogeologic and Geotechnical Report, page 10

~~15~~ 15. The technical studies and monitoring completed since adoption of the 2003 CDO show that the unlined treatment and disposal ponds created a localized groundwater "mound" that causes shallow groundwater beneath the Facility's ponds to flow towards Sutter Creek, where it seeps into the creek channel during periods when natural flows in the creek are low.

~~16~~ 16. The Discharger did not come into compliance with the Groundwater Limitations of the 1995 WDRs, in violation of the 2003 CDO.

~~17~~ 17. The Discharger's groundwater monitoring data and technical reports show that the shallow groundwater contains elevated concentrations of iron and manganese downgradient of the Facility. Specifically, monitoring wells MW2 and MW3A are downgradient of the Facility's ponds, as well as directly adjacent to, and upgradient of, Sutter Creek. These wells consistently have dissolved iron and manganese concentrations greater than the background well. The following table summarizes dissolved iron and manganese concentrations between March 2009 and September 2012[9].

Dissolved Iron and Manganese Concentrations in Groundwater (µg/L)

	Monitoring Wells and Locations			
Constituent	MW1 (Background)	MW2 (Downgradient)	MW3A (Downgradient)	Secondary MCL
Dissolved Iron				
Range of Results	ND<5 to 31	25 to 2,100	ND<50 to 6,800	300
Mean Results	13.9	1,940	3,820	
Dissolved Manganese				
Range of Results	ND<5 to 28	3,100 to 4,600	3,000 to 6,500	50
Mean Result	6.9	3,920	5,510	

These results show that the discharge has caused dissolved iron and manganese in shallow groundwater to exceed the secondary MCLs, in violation of the groundwater limitations. Although iron and manganese are not present in the Facility's effluent at high concentrations, the presence of degradable organic matter in the wastewater depletes oxygen, which creates reducing conditions in the groundwater mound beneath the WWTF's ponds. Reducing conditions promote dissolution of iron and manganese. These minerals are naturally present in the soil beneath the ponds. This mechanism of groundwater degradation was acknowledged in the December 2009 Final EIR, which states:

> *Dissolved iron and manganese levels* [in shallow groundwater] *are likely a result of anaerobic decomposition of biological material. This decomposition occurs either in the anaerobic zone at the bottom of the existing treatment ponds or subsurface as effluent enters the groundwater at the percolation ponds.*[10]

---

[9] Prior to 2008, groundwater samples were not filtered before analysis for metals. Without filtration to remove clay and silt particles, analytical results for metals would include any metals contained within the minerals that form the soil.

[10] City of Ione Wastewater Treatment Facility Final EIR, pages 2-36.

Combined with the fact that MW2 and MW3A are approximately 100 feet upgradient of the portion of Sutter Creek where groundwater has been observed seeping into the creek, these data show that it is likely that the seepage contains constituents that are present as a consequence of the treatment and discharge of waste in unlined ponds. The Discharger's 1995 WDRs did not allow these impacts to occur, and the Discharger was required to eliminate the processes that resulted in the discharge of polluted groundwater to the creek. This could have been accomplished by eliminating the groundwater degradation or by eliminating the seepage.

18. The Discharger did not comply with Task 8 of the 2003 CDO. Task 8 required submittal of a complete RWD with proposed improvements to bring the facility into compliance with the 1995 WDRs and the 2003 CDO. Board staff concurred that the proposed lined treatment ponds, tertiary treatment, and disinfection with ultraviolet light would greatly improve the effluent quality discharged to the percolation/evaporation ponds, which might reduce the level of groundwater degradation caused by the discharge. However, the Discharger did not show that the design would stop the seepage of degraded groundwater into Sutter Creek, and did not show that the proposed improvements would result in significantly lower concentrations of iron and manganese in the shallow groundwater.

19. The City had been in violation of its 1995 WDRs since 2001, had not complied with the 2003 CDO, and had not submitted a complete RWD. The Discharger had been unable to commit to a course of action to prevent groundwater pollution, possible wastewater seepage to Sutter Creek, and surfacing of groundwater near the wastewater ponds. In addition, the Discharger continued to discharge wastewater to two unpermitted ponds during the entire eight year period, in violation of the 1995 WDRs.

2011 CDO and Violations of the CDO

20. As described above, the City failed to comply with the 2003 CDO. Although the Water Board had the option of assessing an administrative civil liability for the failure to comply, instead the Board chose to adopt a new CDO to provide the City with a new timeline for compliance. On 8 April 2011, the Water Board adopted CDO R5-2011-0019, which requires, in part, that the City:

a. Address the three underlying compliance issues: groundwater pollution with iron and manganese; seepage of polluted groundwater into Sutter Creek; and the construction and use of a two unpermitted effluent disposal ponds;
b. Submit a Seepage Discharge Compliance Plan by 30 January 2012; and
c. Construct facility improvements that will effectively stop the mobilization and discharge of iron and manganese, and either:
    i. Stop any indirect discharge (seepage) of degraded groundwater to Sutter Creek that is in violation of the Clean Water Act; or
    ii. Obtain an NPDES Permit that regulates the indirect discharge of degraded groundwater to Sutter Creek.

22. The City chose option (i), above, and therefore the CDO required that the City submit a RWD by 30 May 2012 and then by 30 October 2013, certify that (a) the facility upgrades have been completed, (b) the facility does not discharge to Sutter Creek in violation of the Clean Water Act, and (c) any groundwater degradation that occurs due to treatment and disposal of wastewater is consistent with State Water Board Resolution 68-16.

23. The City of Ione did not submit the RWD until 30 July 2012. Staff's review found that the RWD did not meet the criteria of the 2011 CDO, and therefore the City had failed to meet its obligation to submit a complete RWD by 30 May 2012. The Discharger subsequently submitted a revised RWD on 28 September 2012, which staff determined to be satisfactory.

2012 Administrative Civil Liability

24. On 10 September 2012, the Executive Office issued Administrative Civil Liability Complaint R5-2012-0558 for $143,552 to the City of Ione for failure to submit a complete RWD as required by the 2011 CDO. On 10 January 2013, the matter was settled when the Assistant Executive Officer signed the Final Settlement Agreement and Stipulation. The City of Ione was assessed a civil liability of $123,818. Of that amount, $61,909 was paid into the Cleanup and Abatement Account and the remaining $61,909 will be permanently suspended after the City completes an Enhanced Compliance Action (the Preston Avenue Sewer Slip Lining Project).

Rationale for 2013 CDO

25. During 2012, the City submitted multiple RWDs and participated in a number of meetings with staff to present proposed upgrades to bring the facility into compliance with the 2011 CDO and the 2003 WDRs. Because the City's proposed upgrades maydo not meet the timeline set forth in the 2011 CDO, this 2013 CDO is necessary to allow additional time to come into compliance with the groundwater limits and to stop the potential seepage of degraded groundwater to the creek. Based on the City's submittals and meetings, the information outlined below is a summary the City's proposal as it relates to groundwater quality. The City of Ione will:

Comment [cms1]: Possible Alternative - Because the City's proposed upgrades will not result in the immediate improvement of the degraded groundwater, this 2013 CDO is necessary to allow additional time...

a. Construct and operate two new water recycling land application areas (LAAs), which would include an 11-acre area referred to as the WWTF Field and a 67-acre parcel known as the Town Field;

b. Install and operate a sodium hypochlorite injection system and contact chamber for effluent disinfection prior to land application;

c. Install and operate additional aerators in treatment Ponds 1 through 3 to achieve the horsepower shown in the table below:

Aeration Capacity

	Pond 1	Pond 2	Pond 3	Pond 4
Existing Capacity	15 HP	7.5 HP	7.5 HP	7.5 HP

Upgraded Capacity	30 HP	27.5 HP	17.5 HP	No change

d. Install and operate a mixer unit in Pond 5 (completed June 2012).

e. Remove anoxic soil and sludge from Pond 5 and sludge from Pond 6, and subsequently backfill and compact with clean fill to replace the removed soil and ensure~~bring~~ the bottom of these two ponds ~~to~~maintains an elevation above the seasonal high groundwater level.

f. Monitor, on a monthly basis for one year, at Ponds 5, 6, and 7 using field instruments to measure dissolved oxygen (DO), oxygen reduction potential (ORP), and sludge depths.

g. Install a new groundwater monitoring wells between Ponds 1 and 5 (completed in April 2013).

h. Monitor, on a monthly basis for one year, at groundwater wells MW2, MW3, MW3A, and the new well for pH, electrical conductivity (EC), DO, ORP, total dissolved solids (TDS), stable isotopes, total and fecal coliform, nitrate as nitrogen, TKN, chloride, sodium, and dissolved boron, iron and manganese. Based on the installation of the mixer and aerators, the removal of the sludge from the ponds and the implementation of reclamation, the City expects to see improvements in groundwater quality at the new well within six months, and statistically significant improvements at the downgradient wells within one year.

i. If improvements in groundwater quality are not seen within one year, then 2~~-4~~ feet of clean soil~~clay~~ will be added to the bottom of Pond 5.

Comment [cms2]: In the compliance timelines and tasks, this could never occur because lining of pond 5 would be mandated.

j. If groundwater quality is not improved after the placement of soil~~clay~~, then the City will no longer percolate wastewater as a disposal method (either the percolation ponds will be backfilled or they will be converted to lined storage ponds).

Comment [cms3]: This has never been a part of the City's plan.

k. As part of Phase II capacity improvements, construct a 17 million gallon clay-lined pond, remove the 11-acre WWTF Field as a LAA, and construct and operate two new LAAs (56 acres total).

26. The 2013 WDRs establish flow limits, groundwater quality limits, and effluent quality limitations, permit the use of Ponds 6 and 7, and, after improvements are made, allow the City to discharge treated wastewater to land application areas. However, the City may not be able to~~cannot~~ immediately comply with Prohibition A.1, Groundwater Limitation D.b, Discharge Specification E.1, or Discharge Specification E.3 of the 2013 WDRs.

a. Prohibition A.1 states: *Discharge of wastes to surface waters or surface water drainage courses is prohibited.*

b. Groundwater Limitation D.b states, in part,: *Release of waste constituents from any portion of the WWTF shall not cause groundwater to… contain constituents in concentrations that exceed either the Primary or Secondary MCLs established therein.*

c. Discharge Specification E.1 states: *No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.*

d. Discharge Specification E.3 states: *Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.*

27. The 2003 CDO required that the City comply with WDRs Order 95-125, including the Prohibitions and the Groundwater Limitations in that Order, by December 2005. The City did not comply. The 2011 CDO gave the City additional time to comply with these Prohibitions and Groundwater Limitations, and set a compliance date of 30 October 2013. However, ~~according to the City's own submittals,~~ its current proposal ~~will~~may not ensure that by 30 October 2013, it will be able to make the findings required by the 2011 CDO that (a) the improvements have been constructed, (b) the facility does not discharge to Sutter Creek in violation of the Clean Water Act, and (c) any groundwater degradation that occurs due to treatment and disposal of wastewater is consistent with State Water Board Resolution 68-16-. This 2013 CDO is being issued to ensure that, should the City's current proposal ~~not eliminate the discharge of polluted groundwater to Sutter Creek or prevent groundwater degradation that does not meet the conditions of State Water Board Resolution 68-16~~prevent these findings from being made, then the City will implement all appropriate actions to ensure that these conditions are resolved in an enforceable timeline.

Regulatory Considerations

28. The Central Valley Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised September 2009 (the "Basin Plan"), designates beneficial uses, includes water quality objectives to protect the beneficial uses, and includes implementation plans to implement the water quality objectives.

29. Surface water drainage from the facility is to Sutter Creek, a tributary of the Cosumnes River. The beneficial uses of the Cosumnes River, as stated in the Basin Plan, are municipal and domestic supply, irrigation, stock watering, contact recreation, canoeing and rafting, other noncontact recreation, warm and cold freshwater habitat, warm and cold migration, warm and cold spawning, and wildlife habitat.

30. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

31. Water Code section 13301 states, in relevant part:

> When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action. In the event of an existing or threatened violation of waste discharge requirements in the operation of a community sewer system, cease and desist orders may restrict or prohibit the volume, type, or concentration of waste that might be added to such system by discharges who did not discharge into the system prior to the issuance of the cease and desist order. Cease and desist orders may be issued directly by a board, after notice and hearing.

32. Water Code section 13267 (b) states:

> In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

33. The technical reports required by this Order are necessary to assure compliance with both this Order and the WDRs, and to ensure protection of public health and safety. The Discharger owns and operates the facility that discharges the waste subject to this Order.

34. Issuance of this Order is an enforcement action of a regulatory agency, and therefore, is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code § 21000 et seq.), in accordance with California Code of Regulations, title 14, section 15321(a)(2).

IT IS HEREBY ORDERED that, pursuant to Water Code sections 13301 and 13267, the City of Ione, its agents, successors, and assigns shall implement the following measures necessary to ensure long-term compliance with WDRs Order R5-2013-XXXX, or any superseding permits or orders issued by the Central Valley Water Board.

This Cease and Desist Order rescinds and replaces Cease and Desist Order R5-2011-0019 except for the purpose of enforcing violations that have occurred to date.

Any person signing a document submitted to comply with this Order shall make the following certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Effective immediately, the Discharger shall comply with all requirements of WDRs Order R5-2013-XXXX (or subsequent WDRs that may rescind and/or replace Order R5-2013-XXXX), with the exception of Prohibition A.1 (as it relates to the discharge of degraded groundwater into Sutter Creek), Groundwater Limitation D.b, Discharge Specification E.1, and Discharge Specification E.3 as provided for in this Order, below.

In accordance with the time schedule set forth in this Order, the Discharger shall construct facility improvements that will effectively stop the mechanisms that result in the mobilization and discharge of iron and manganese in violation of the Groundwater Limitations of the 2013 WDRs, shall effectively stop any indirect discharge (seepage) of polluted groundwater to Sutter Creek, and shall bring the facility into compliance with the 2013 WDRs. Compliance with the WDRs and this Order must be achieved no later than **1 May 2016**.

Definitions

The "baseline concentrations" for MW2, MW3, and MW3A shall be those concentrations reported in the Fourth Quarter 2012 Groundwater Monitoring Report, which are listed in the table below. By April 2013, the Discharger will install one new groundwater monitoring well (hereafter the "new well") between Pond 5 and Pond 1. The baseline concentrations for the "new well" shall be those concentrations obtained during the April 2013 monthly sampling event.

Comment [cms4]: It is not appropriate to mandate significant improvement from a well that has yet to be installed or monitored. There are numerous reasons why this may not work.

Baseline Concentrations for Selected Groundwater Monitoring Wells

Constituent	MW2	MW3	MW3A	New Well
Dissolved Iron (ug/L)				Note 1
Dissolved Manganese (ug/L)				Note 1

Note 1: As reported in the April 2013 groundwater monitoring report.

For the purposes of this Order, "significant improvement" is a defined percent reduction of the baseline concentrations for groundwater at MW2, MW3, MW3A, and the new well.

If there is any perceived conflict between the compliance dates in the 2013 WDRs and this CDO, then the dates in this CDO take precedence.

Monitoring and Reporting

In addition to conducting the monitoring required by Monitoring and Reporting Program (MRP) R5-2013-XXXX, the Discharger shall:

a. Monitor the wastewater in Ponds 5, 6, and 7 for dissolved oxygen (DO), oxygen reduction potential (ORP), and sludge depth. Samples shall be collected at least once per month, and shall be collected and analyzed under an approved Sampling

and Analysis Plan.

b. Monitor the groundwater in wells MW2, MW3, MW3A, and the new well for the following minimum constituents; pH, EC, DO, ORP, TDS, dissolved iron, and dissolved manganese. Sample collection and analysis shall follow the procedures required by MRP R5-2013-XXXX.

c. Record the daily hours of operation of each aerator and mixer during the reporting period.

d. Report the results of the additional monitoring in a *CDO Monthly Monitoring Report* that is submitted by the **fifteenth day of the second month** following each calendar month (i.e., the work performed in April shall be reported by the 15th of June, and the work performed in May shall be reported by the 15th of July of each year). The monitoring reports shall meet the monitoring report requirements described in MRP R5-2013-XXXX.

e. The above monitoring shall begin during the month of ~~April~~ October**2013** and shall continue until this CDO is rescinded or until Ponds 5, 6, and 7 are no longer operated as percolation ponds. The first monitoring report is due on **15 November~~June~~ 2013**.

Compliance timeline and tasks

By 1 July~~June~~ 2013, the Discharger shall submit an *Additional Aeration Report* that documents that additional aerators have been added to Ponds 1, 2, and 3 such that the aeration horsepower is at least that described in Finding 25.c, above.

By 1 June 2013, the Discharger shall submit an *Anoxic Soil and Sludge Removal Work Plan* describing the removal of anoxic soil and sludge from Pond 5 and sludge from Pond 6, and the installation and compaction of clean fill to bring the bottom of these ponds above the seasonal high groundwater level identified in the WDRs. The plan shall include the proposed procedures and testing frequencies for identifying anoxic soils (e.g., field tests for ORP); procedures for soil and sludge removal, drying, and disposal; and the procedures to backfill and compact the clean fill. The plan shall include the measures to be used to control runoff or percolate from the removed material, and a schedule that shows how all dried material will be removed from the site prior to the onset of the rainy season on 1 October 2013.

By 1 October 2013, the Discharger shall submit a *Sludge and Anoxic Soil Removal Report*. This report shall document that the sludge and anoxic soil has been removed, disposed of at a facility permitted to accept the waste, and that clean fill has been compacted and placed to bring the bottom of these ponds to above the seasonal high groundwater level.

By 1 May 2014, the Discharger shall submit the *Effectiveness of Facility Upgrades Evaluation Report #1*. The report shall evaluate whether or not the dissolved iron and manganese concentrations in monitoring wells MW2, MW3, MW3A, and the new well have

Comment [cms5]: This deadline has effectively moved up the compliance date by one month. This is part of the 2011 CDO compliance deadline of 30 October 2013.

Comment [cms6]: Compliance with the existing CDO is due 10/30/2013. Finding 25h of this proposed CDO acknowledged that the City expects to see improvements in groundwater quality within six months and statistically significant improvements at the downgradient wells within one year. One year from the completion of these improvements is 10/30/2014.

been reduced by at least 25% from the "baseline concentrations" described in Item 3. If concentrations have been reduced to this level in each well, then the Discharger shall continue to take all appropriate actions to meet the final compliance date of 1 May 2016. However, if concentrations have not been reduced by 25% over baseline, then the Discharger shall submit the report described in Item #10.

If it is required as a result of the *Effectiveness of Facility Upgrades Evaluation Report #1*, then by **15 May 2014**, the Discharger shall submit a *Pond 5 Lining Work Plan*. This work plan shall include procedures to line the bottom 2-4 feet of Pond 5 with clean clay or with a HDPE liner, the geotechnical and analytical material specifications for the clean clay or liner, and the proposed source of the liner material. The specification shall include the proposed geotechnical tests for the source material and field tests for placement and compaction of the material. The Work Plan shall provide documentation of whether the proposed material is clean (based on analytical results) and shall include a construction quality control plan for ensuring compliance with the material specifications. The Work Plan shall also describe the hydraulic conductivity of the proposed liner material and evaluate whether the action of lining the pond with clay or HDPE will result in compliance with this Order by 1 May 2016. In addition, the Work Plan shall include a water balance and a Report of Waste Discharge if the water balance shows that the storage and disposal capacity is less than that described in the 2013 WDRs.

If required to submit a *Pond 5 Lining Work Plan*, then by **30 November 2014**, the Discharger shall submit a *Pond 5 Lining Construction Report* that shall document whether the pond was lined according to an approved work plan.

By 1 May 2015, the Discharger shall submit the *Effectiveness of Facility Upgrades Evaluation Report #2*. The report shall evaluate whether or not the dissolved iron and manganese concentrations in MW2, MW3, MW3A, and the new well have been reduced by at least 75% of the "baseline concentrations" described in Item 3. If concentrations have been reduced to this level in each well, then the Discharger shall continue to take all appropriate actions to meet the final compliance date of 1 May 2016. However, if concentrations have not been reduced by 75% over baseline, then the Discharger shall submit the report described in Item #13.

If it is required as a result of the *Effectiveness of Facility Upgrades Evaluation Report #2*, then by **15 May 2015**, the Discharger shall submit a *Percolation Pond Decommissioning and Alternate Effluent Disposal Plan*. The Discharger shall either propose to install a synthetic liner in Ponds 5, 6, and 7 such that they no longer operate as percolation ponds, or shall propose to backfill the ponds and no longer use them for storage or disposal. The work plan shall include an updated water balance. If the water balance indicates that there will be insufficient capacity after percolation disposal is removed, then the Discharger shall also submit a Report of Waste Discharge. The RWD must include a proposal for additional storage and disposal sufficient to meet the flow limitations in the 2013 WDRs, and must include a schedule for implementation that meets the final compliance date (1 May 2016) of this Order.

By **1 November 2015**, the Discharger shall submit an *Effectiveness of Facility Upgrades Evaluation Report #3* that evaluates the reduction of dissolved iron and manganese concentrations in MW2, MW3, MW3A, and the new well, and predicts whether or not the

Comment [cms7]: What is the basis of the 25%? What is the "report described in item #10"?

Comment [cms8]: This groundwater cleanup portion has improperly tied the effectiveness of the treatment, storage, and disposal of the wastewater with the groundwater remediation. For example, the proposed changes may be effective for preventing future groundwater degradation but if it does not also result in swift remediation of the degraded groundwater, it is considered ineffective and will be required to be modified.

Comment [cms9]: This is an erroneous reading of what the RWD proposed and the plan outlined in the draft WDRs.

Comment [cms10]: What is the engineering or statistical basis of the 75%? What is the "report described in item #13"?

Discharger will meet the final compliance date of 1 May 2016 in each well. If the data shows that compliance may not be achieved, then the Discharger shall propose additional steps in order to comply with the final compliance date in this Cease and Desist Order.

By 1 May 2016, the Discharger shall submit a *Final Compliance Report* which shall contain either:

a. ~~If the Discharger was required to submit the *Percolation Pond Decommissioning and Alternate Effluent Disposal Plan*, then the report shall show that the plan was implemented and that Ponds 5, 6, and 7 are no longer used for percolation disposal.~~

b. If the Discharger was not required to decommission the percolation ponds, then the report shall certify that the Discharger fully complies with all aspects of the 2013 WDRs, and in particular, Prohibition A.1 (as it relates to the discharge of polluted groundwater into Sutter Creek), Groundwater Limitation D.b, Discharge Specification E.1, and Discharge Specification E.3.

In addition to the above, the Discharger shall comply with all applicable provisions of the Water Code that are not specifically referred to in this Order. As required by the Business and Professions Code sections 6735, 7835, and 7835.1, all technical reports shall be prepared by, or under the supervision of, a California Registered Engineer or Professional Geologist and signed/stamped by the registered professional.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement or may issue a complaint for administrative civil liability.

Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 11 April 2013.

_____

PAMELA C. CREEDON, Executive Officer

DOCUMENT # 11

James D Maynard

From: Creedon, Pamela@Waterboards
Sent: Wednesday, February 06, 2013 11:01 AM
To: Christopher Sanders
Cc: Wyels, Wendy@Waterboards; James D Maynard; Ed Pattison; Pulupa, Patrick@Waterboards; Busby, Robert@Waterboards
Subject: RE: Ione comments to Draft WDRs and Draft CDO

Chris:

Thank you for getting your comments to our office as requested. As we have discussed, there is time to work with staff and changes can be made after the release of the documents for public comment. As we also discussed, we have limited time to release the documents for comment to ensure they are placed on our April board meeting agenda. Our staff was delayed in getting the draft documents completed due to the City failing to submit a complete ROWD in a timely manner which severely limited our ability to provide drafts to the City. However, I understand my staff has worked closely with City representatives during the development process so I am confident the City has not been absent or ignored during this process.

Kindly,

Pamela

Pamela Creedon
Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Office: (916) 464-4839
Fax: (916) 464-4758

www.waterboards.ca.gov\centralvalley

From: Christopher Sanders [mailto:cms@eslawfirm.com]
Sent: Monday, February 04, 2013 5:00 PM
To: Creedon, Pamela@Waterboards
Cc: Wyels, Wendy@Waterboards; James D Maynard; Ed Pattison
Subject: Ione comments to Draft WDRs and Draft CDO

Dear Ms. Creedon,

Enclosed are the initial comments of the City of Ione on the administrative drafts of the waste discharge requirements and cease and desist order. We still believe a meeting with staff to discuss suggested changes would be productive prior to release of the documents for public comment. However, we believe any meeting, either before or after release of the document, would prove fruitful to correct the document and make changes that would allow the City to support the efforts of Board staff at the April meeting. We also suggest that the Board consider withdrawing the issuance of the CDO until these discussions occur

Please contact me if you have any questions.

chris

Christopher M. Sanders
Ellison, Schneider & Harris L.L.P.
2600 Capitol Avenue, Suite 400
Sacramento, CA 95816
(916) 447-2166
mailto:cms@eslawfirm.com
www.eslawfirm.com

DOCUMENT # 12

CITY ATTORNEY
CITY OF IONE

February 26, 2013

VIA EMAIL ONLY

Mr. Andrew Altevogt
Assistant Executive Officer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, No. 200
Rancho Cordova, California 95670

Re: City of Ione Changes to Draft CDO, City of Ione WWTF

Dear Mr. Altevogt,

On behalf of the City of Ione, thank you for the opportunity to meet with your staff on February 12, 2013 to discuss changes to the draft cease and desist order ("CDO") and the draft waste discharge requirements ("WDRs") that the Regional Water Quality Control Board ("RWQCB" or "Board") intends to propose for adoption at the April 2013 RWQCB Meeting. We understand that Board staff has devoted significant time and effort toward ensuring the City of Ione is in compliance with regulatory standards set by the Board. We also thank you for the opportunity to provide additional comments to the proposed CDO.

At the February 12 meeting between the City and Board staff, you asked that the City submit an additional written proposal for changes to the CDO to include the following: (1) proposed groundwater monitoring in existing monitoring wells MW2, MW3 and MW3A and in a proposed new well near pond 5 that will be denominated MW2A; (2) numeric goals, trend lines, and a timeline to assess the effectiveness of facility improvements through decreased levels of iron and manganese in those four monitoring wells; and (3) a proposed timeline for future facility improvements triggered by a failure to meet the proposed levels of iron and manganese in future years.

The City reiterates, and as is underscored in the attached report by Dr. Steve Deverel of Hydrofocus – "Measuring Statistically Significant Manganese and Iron Concentration Changes in Monitoring Wells, City of Ione, WWTF" ("Hydrofocus Report"), that if we had a previous opportunity to discuss and review the proposed CDO with Board staff during its development, significant problems with the proposed CDO could have been

Maynard Law • 1501 28th Street • Sacramento, CA 95816
916.733.3510 • 916.733.3512 • jmaynard@jamesmaynardlaw.com

avoided. Specifically, the City believes the proposed language in paragraphs 10 and 13 of the proposed Order that mandate a reduction of 25% in iron and manganese levels from baseline by May 2014 and 75% from baseline by May 2015 does not appear to be based on scientific or technical evidence but seems to be an arbitrary target.

The City's specific requests for changes to the proposed CDO and the proposed Monitoring and Reporting Program ("MRP") are as follows:

1. The City proposes that the numeric goals, trend lines, and a timeline to assess the effectiveness of facility improvements through decreased levels of iron and manganese in the City's monitoring wells be based on the report by Dr. Steve Deverel of Hydrofocus. The Hydrofocus Report demonstrates that it is not scientifically or technically feasible to mandate a standard decrease for the various monitoring wells because of the difference in travel times from the western edge of pond 5, the likely source of iron and manganese in the groundwater, to each monitoring well. For example, travel times for pond 5 water range from a low of between 5 and 68 days in new MW2A to a high of between 155 and 2,322 days for MW3A.

   These different travel times are dependent on each well's distance from pond 5, the likely porosity of the soil between the western edge of pond 5 and each well, and the hydraulic gradient. Given the difference in groundwater travel times between pond 5 and each proposed monitoring well, it is evident that each monitoring well must be assigned a separate target for the reduction of iron and manganese levels. Further, in assigning a numerical target for the reduction in iron and manganese to each well, the City requests that the proposed iron and manganese goals include a range as shown in Tables 3a and 3b of the Hydrofocus Report.

   The City also requests that because of the variability in likely reductions of levels of iron and manganese for MW2 and MW2A and in likely reductions of levels of iron and manganese for MW3 and MW3A, that only MW2 and MW2A be used as compliance wells to assess the efficacy of the proposed facility modifications. For instance, during the first year of improved facility operations, between October 2013 and October 2014, manganese levels will likely decrease by 24% to 29% in MW2A but will likely decrease by only 0% to 7.3% in MW3 and 0% to 4.9% in MW3A. Using the two monitoring wells closest to pond 5 would clearly demonstrate whether the facility improvements have stopped the mobilization of iron and manganese into groundwater.

   While the City hoped that reductions in iron and manganese levels in the local groundwater would be more robust, the City was never informed by Board staff that the efficacy of its proposed facility improvements, designed to "**effectively stop the mechanisms that result in the mobilization and discharge of iron and manganese in violation of State Board Resolution 68-16**" as mandated by the 2011 CDO, would be

measured by remediation of iron and manganese levels in the local groundwater. Had the City been aware that this was the measuring stick by which its facility improvements would be assessed, it might have proposed different or additional improvements. The City might also have proposed additional mechanisms designed to aerate the local groundwater and thereby cause iron and manganese to precipitate out of solution.

2. Because the City proposes that only MW2 and MW2A be used as compliance wells, the City proposes to modify the Board's proposed MRP to provide for monthly monitoring of monitoring wells MW2, MW2A to provide sufficient data with which to evaluate the statistical significance of decreased levels of iron and manganese in the local groundwater. The results of this increased monitoring of MW2 and MW2A would still be presented to the Board on a quarterly basis as outlined in the proposed MRP.

3. Even if the proposed CDO adopts target ranges as proposed in the Hydrofocus Report, rather than hard numerical objectives, the proposed CDO fails to allow sufficient time for the proposed facility improvements to decrease iron and manganese levels in the local groundwater. Although facility improvements will begin in May 2013, Pond 5 will not be completely emptied until September 2013 and all facility improvements will not be complete, in accordance with the Board's 2011 CDO, until October 2013. The City believes it is more appropriate, as proposed in the City's Report of Waste Discharge, to allow a full year to elapse between completion of facility improvements and measurement of statistically significant decreases in levels of iron and manganese in the local groundwater.

   The City requests that the "Effectiveness of Facility Upgrades Evaluation Report #1" described in paragraphs 10 and 11 of the Order, be delayed from May 2014 to October 2014 and that the "Pond 5 Lining Work Plan" proposed to be submitted concurrently, be changed to reflect the pond 5 modification proposed by the City's Report of Waste Discharge. The pond 5 work plan should be a "Pond 5 Filling Work Plan" where the filling of pond 5 is intended to increase the depth to groundwater from the bottom of pond 5.

   Similarly, the "Effectiveness of Facility Upgrades Evaluation Report #2" described in paragraphs 13 and 14 of the Order should be delayed to October 2015. Should that report fail to show decreased iron and manganese levels in MW2 and MW2A as outlined in Tables 3a and 3b of the Hydrofocus Report, the City should be required to submit a "Percolation Pond Decommissioning and Alternate Effluent Disposal Plan" in October 2015 with construction of proposed improvements to occur by October 2016.

> Since the 2011 CDO requires compliance by October 30, 2013, and Draft Finding No. 25(h) acknowledges that the City expects to see statistically significant improvements at the down-gradient wells within one year of the proposed upgrades, this should entail the assessment of facility upgrades to be due more than one year after October 30, 2013, not May 1, 2014.

As always, the City of Ione is interested in working Board staff to achieve compliance and believes that these issues can be resolved quickly given the foundation set at our prior meeting on February 12 and the Board's quickly approaching March 7 deadline for the City to provide hearing documents to the Board for publication with the Board April 11-12 agenda.

Thank you for the opportunity to provide further comments on the proposed CDO, please don't hesitate to contact me directly should you have any questions.

Sincerely,

James Maynard
Ione City Attorney

JM/ld

Enclosure

cc: City Manager Ed Pattison (via e-mail only)
Chris Sanders, Ellison, Schneider, Harris (via e-mail only)
Mary Grace Pawson, GHD (via e-mail only)
Steve Deverel, Hydrofocus (via e-mail only)