

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

CLEANUP AND ABATEMENT ORDER NO. R6V-2013-0045

**WASTEWATER TREATMENT PLANT, CITY OF BARSTOW
WDID NO. 6B360101001**

**REQUIRING THE CITY OF BARSTOW TO CLEAN UP AND ABATE THE DISCHARGE
AND THREATENED DISCHARGE OF NITRATE CONTAMINANTS TO THE
GROUNDWATERS OF THE MOJAVE RIVER HYDROLOGIC UNIT**

_____ San Bernardino County _____

The California Regional Water Quality Control Board, Lahontan Region (hereinafter Water Board) finds that:

A. FINDINGS

1. The City of Barstow (hereafter the "City") owns and operates the Barstow Wastewater Treatment Plant (Facility) located at 2200 Riverside Drive, Barstow in San Bernardino County.
2. Waste Discharge Requirements (WDRs) contained in Water Board Order No. 6-94-26 (Order) regulate waste discharges from the Facility. The Order authorized disposal as follows:
 - a. Secondary-treated effluent to eight percolation ponds, and
 - b. Secondary-treated effluent and biosolids to two reclamation fields: one active 60-acre reclamation field located on the south side of the Mojave River and a second, inactive, 67-acre reclamation field on the north side of the Mojave River (hereinafter the "Northern Reclamation Field").
3. Until 2004, and for approximately two decades prior to 2004, the City applied up to 500,000 gallons per day of secondary-treated effluent to the Northern Reclamation Field. The secondary-treated effluent contained nitrate- and total Kjeldahl (TKN) nitrogen, which converts to nitrate in the soil. The City also spread unknown amounts of secondary-treated sewage biosolids from the Facility to the Northern Reclamation Field.
4. Nitrate-containing wastes have polluted groundwater beyond the boundaries of the Northern Reclamation Field. Quarterly monitoring reports produced by the City have partially delineated the extent of the nitrate pollution. The groundwater nitrate plume, as of January 2013, is over 7,500 feet long and about 1,500 feet wide, and contains nitrate (as nitrogen) concentrations that exceed the Maximum Contaminant Level (MCL) of 10 milligrams per liter (mg/L)¹ (Attachment A)². Moreover, the plume has migrated down gradient from the Northern Reclamation Field to the Soapmine Road neighborhood, affecting a number of domestic drinking water wells.

¹ The MCL is 45 mg/L nitrate as nitrate (NO₃) (Cal. Code Regs., tit. 22, § 64400 et seq.), which is equivalent to 10 mg/L as nitrate as nitrogen (N). For simplicity, this Order will use the common term "nitrate" when referring to nitrate as nitrogen (N).

² Nitrate as N iso-concentration map, Shallow groundwater zone, 4th quarter 2012, DPRA Inc.

5. The Water Board adopted Cease and Desist Order No. R6V-2004-0029 (2004 Order), on July 27, 2004, which required the City to: (1) cease further disposal of biosolids to the Northern and Southern Reclamation fields, (2) upgrade the treatment plant to reduce effluent nitrogen concentrations and comply with waste discharge requirements, and (3) submit quarterly compliance reports.
6. The Water Board issued Cleanup and Abatement Order No. R6V-2007-0017 (2007 Order) on May 25, 2007, which required the City to provide uninterrupted replacement water to residences in the Soapmine Road area where the nitrate concentration in groundwater exceeds 5 mg/L. In issuing that Order, the Water Board found that the groundwater beneath and immediately down gradient of the Northern Reclamation field exceeded the drinking water standard for nitrate, (10 mg/L), and thus the affected groundwater was no longer useable for drinking or domestic supply. On June 18, 2007, the City petitioned this Order to the State Water Board and then requested the petition be held in abeyance.
7. The Water Board issued Investigative Orders to the City on May 18, 2007 and February 17, 2009, respectively. Those investigative orders required the City to develop a plan of action to investigate the nitrate groundwater pollution and to propose and implement an interim and final cleanup remediation strategy.
8. From approximately October 2009 through January 2010, the City conducted a pilot-scale evaluation of a Fluidized Bed Reactor (FBR) system to treat nitrate-laden groundwater. The evaluation successfully reduced nitrate concentrations in treated groundwater to less than 5 mg/L.
9. On January 14, 2011, the City produced the Supplemental Report to the Feasibility Study and Remedial Action Plan (SRFSRAP) outlining a plan to clean up the nitrate pollution in groundwater. The report proposes to pump groundwater from the shallow aquifer in the Soapmine Road neighborhood, convey it through an existing pipeline beneath the Mojave River bed, and then treat the groundwater using the FBR system located near the wastewater treatment plant to remove nitrate. The City will elect to discharge treated groundwater into percolation ponds at the Facility, into an infiltration gallery, or use a combination of both the percolation ponds and the infiltration gallery.
10. On February 10, 2012, the City produced a report titled Extraction Well Construction and Aquifer Test Report (EWCATR). The EWCATR demonstrates that the shallow aquifer has the capacity to support the proposed cumulative extraction rate of 1,000 gallons per minute from wells down gradient of the Northern Reclamation Field.
11. On February 24, 2012, the City produced a report titled Second Supplement to the May 2010 Feasibility Study and Remedial Action Plan (Second SSFSRAP). The Second SSFSRAP proposed a groundwater cleanup strategy that builds upon the success of previous pilot studies and aquifer testing discussed above to achieve cleanup of the groundwater pollution near Soapmine Road. The proposed remediation strategy was to extract up to 1,000 gallons per minute cumulatively from a groundwater extraction system consisting of five extraction wells proposed for completion in the upper aquifer. The proposed zone of capture from the extraction wells will have a radius of

- approximately 275 feet, with a half-foot drawdown at the edge of the capture zone.³ The extraction system was intended to establish hydraulic control of the shallow groundwater flowing from the Northern Reclamation Field area and would achieve and maintain hydraulic control of the plume along Webster Road and down gradient of the Northern Reclamation Field.
12. On April 5, 2013, the City modified its proposal after numerous discussions with Water Board staff and submitted a report titled Third Supplement to the May 2010 Feasibility Study and Remedial Action Plan (Third SFSRAP) to add two additional extraction wells to the five-well extraction system along Clay River Road in the vicinity of MW-28 and MW-36. This proposal is to optimize extraction and treatment of groundwater in an area that typically exhibits higher concentrations of nitrate⁴. The anticipated pumping rate with the addition of these two extraction wells (total 7 wells) will remain 1,000 gallons per minute cumulatively. The extraction well and treated effluent disposal locations are shown on Attachment B.
 13. This Cleanup and Abatement Order requires the City to implement elements of the Third SFSRAP to achieve hydraulic control of nitrate-polluted groundwater located under and immediately down gradient from the Northern Reclamation Field and to capture and treat nitrate down gradient of Webster Road using extraction wells along Clay River Road.
 14. This Order does not address: (1) Cleanup and/or abatement of nitrate-contaminated soils at the Northern Reclamation Field, (2) Delineation or cleanup of the entire nitrate contaminant within the Soapmine Road area, and (3) Cleanup and/or abatement of nitrate groundwater pollution on the south side of the Mojave River. Notwithstanding the issuance of this Cleanup and Abatement Order, the Water Board retains the authority to issue additional enforcement orders to address the remediation of nitrate nitrogen pollution in those areas not addressed by this Order.
 15. The City is a responsible party subject to this Order because, as the owner and operator of the Facility, the City submitted technical reports demonstrating the Northern Reclamation Field is a significant source of nitrate groundwater pollution on the north side of the Mojave River.⁵ Concentrations of nitrate immediately down gradient of the Northern Reclamation Field range up to 30 mg/L. Groundwater moves from the Northern Reclamation Field to the east generally parallel to the Mojave River. In addition, the City contributed additional nitrogen mass when biosolids were also disposed to the Northern Reclamation Field as soil amendment. Background studies for groundwater north of the Mojave River indicate background nitrate levels of 6.5 mg/L or less⁶.

³ Second Supplement to the May 2010 Feasibility Study and Remedial Action Plan, dated February 24, 2012, DPRA Inc., p. 5.

⁴ Third Supplement to the May 2010 Feasibility Study and Remedial Action Plan, dated April 5, 2013.

⁵ 1st Quarter, 2010 Groundwater Monitoring Report, dated April 27, 2010, DPRA Inc., Feasibility Study and Remedial Action Plan, Volume 1 of 2, dated May 27, 2010, DPRA Inc. and 2st Quarter 2012 Groundwater Monitoring Report, dated July 27, 2012.

⁶ Background, Seasonality and Migration Report, dated December 18, 2009, DPRA Inc.

B. BENEFICIAL USES AND WATER QUALITY OBJECTIVES

16. The *Water Quality Control Plan for the Lahontan Region* ("Basin Plan") establishes beneficial uses of water and water quality objectives to ensure the protection of those beneficial uses. The Facility, the Northern Reclamation Field, and the Soapmine Road Neighborhood are located within the Mojave Hydrologic Unit and the Middle Mojave River Valley Groundwater Basin.
17. Pursuant to Chapter 2 of the Basin Plan, present and potential beneficial uses of groundwater underlying the Northern Reclamation Field, and down gradient, include domestic and municipal water supply (MUN), agricultural water supply (AGR), industrial water supply (IND), freshwater replenishment (FRSH), and aquaculture (AQUA).
18. Chapter 3 of the Basin Plan states that groundwater designated as a municipal water supply shall not contain concentrations of chemical constituents in excess of the MCL based upon drinking water standards specified in title 22 of the California Code of regulations. Groundwater that contains substances in concentrations above the MCL is impaired with respect to beneficial uses associated with drinking water use (e.g., municipal water supply).

C. CLEANUP STANDARDS

19. The Water Code and regulations and polices developed thereunder require cleanup and abatement of discharges and threatened discharges of waste to the extent technologically and economically feasible. Pursuant to State Water Board Policy 92-49, cleanup and abatement activities are to provide attainment of background levels of water quality or the highest level of water quality that is reasonable if cleanup to background levels of water quality cannot be achieved. Alternative cleanup levels that are less stringent than background levels can only be approved if: (a) they are consistent with the maximum benefit to the people of the State, (b) do not unreasonably affect present and anticipated beneficial use of water, and (c) do not result in water quality less than that prescribed in the Water Quality Control Plans and policies adopted by the State and Regional Water Boards (Resolution No. 92-49, section III (G)). Cleanup to background levels is the presumptive standard. Any proposed alternative that will not achieve background levels must be supported with evidence that it is: (a) technologically or economically infeasible to achieve background levels, (b) the lowest level that is technologically or economically achievable is demonstrated and does not exceed water quality objectives, and (c) the pollutant will not pose a substantial present or potential hazard to human health or the environment for the duration of the exceedance of background levels.
20. In an August 19, 2010 letter, Water Board staff concurred with the Discharger's recommendation that an interim nitrate background concentration for groundwater north of the Mojave River be set at 6.5 mg/L. For the purposes of this Order, cleanup actions must continue until a nitrate concentration of 6.5 mg/L is achieved. Water Board reserves the right to re-assess background concentrations and modify the groundwater cleanup levels.

D. AUTHORITY – LEGAL REQUIREMENTS

- 21. The secondary-treated effluent and biosolids discharged to the Northern Reclamation Field are “wastes” pursuant to Water Code section 13050, subdivision (d).
- 22. Water Code section 13050, subdivision (l) defines “pollution” as an alteration of the water quality of the waters of the state by waste to a degree that unreasonably affects either beneficial uses or facilities that serve these beneficial uses.
- 23. Water Code section 13267, subdivision (b): states the following:

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 discharges 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.

Thus, Water Code section 13267, subdivision (b) authorizes the Water Board to require technical and monitoring reports to identify measures to protect water quality and restore beneficial uses (See Attachment C).

- 24. The technical and monitoring reports required by this Order are necessary to ensure the proposed seven extraction wells mitigate impacts caused by nitrate contamination from the Northern Reclamation Field on groundwater beneficial uses down gradient of Webster Road. Further, the following reports shall serve to verify that the City performs all actions required by this Order to implement the work plans and that performance of those actions is adequate to restore the beneficial uses of the groundwater that have been adversely affected by discharges from the Discharger’s Facility. A justification for the reports and the benefits to be obtained from them is summarized below in Table 1:

Table 1 – Justification for Technical Report

Report	Report Requirement and Justification
Design Report	Establish final design criteria and elements necessary to construct an initial 7-well extraction, treatment and disposal system. Report needed to evaluate feasibility of system to achieve cleanup objectives.
Progress Status Report	Needed to evaluate whether the City is on schedule to complete system installation and start-up.
As-built Report	Needed to evaluate compliance with Order and assess feasibility to achieve cleanup objectives.
Self-Monitoring Reports	Report results demonstrating system performance. Provide a groundwater model calibration analysis to demonstrate cleanup system performance with respect to predictive up gradient plume capture and that the cleanup simulations remain realistic. Report is needed to evaluate compliance with Order and provide information to adjust cleanup actions and plan for future additional actions.

25. Water Code section 13304, subdivision (a) states:

Any person ... who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner.

26. The conditions described in the Findings of this Order identify waste that has been discharged or deposited onto lands or into waters of the state (i.e., groundwater beneath the Northern Reclamation Field) or that probably will be discharged into the waters of the State. The conditions described in Findings 3, 4, and 5 constitute conditions of pollution because nitrate concentrations in the groundwater exceed the MCL for nitrate. Therefore, the quality of the groundwater has been altered to a degree that unreasonably affects beneficial uses. As a result, Water Code section 13304 authorizes the Water Board to issue this Cleanup and Abatement Order.

THEREFORE, IT IS HEREBY ORDERED that, pursuant to Water Code sections 13267 and 13304, the City shall clean up and abate discharges and threatened waste discharges in violation of the Basin Plan prohibitions for the Mojave Hydrologic Unit, and shall comply with all the other provisions of this Order as follows:

A. ORDERS

1. By **October 31, 2013**, the City shall submit to the Water Board's Victorville office for the Executive Officer's approval (or her delegate's approval) a Design Report, including construction plans, apparatus and specifications, for the seven-well extraction and additional new monitoring wells as necessary to establish the extent of drawdown from the extraction wells network proposed in the Third SRFSRAP.

The Design Report shall include, but not be limited to, the following information:

- a. *Design Criteria:* A detailed description of extraction and monitoring well design specifications and locations, associated pump and pipeline specifications and locations, treatment system performance standards, equipment sizes and locations, discharge transport pipeline specifications, and outfall structure design and location.
- b. *Implementation Activities:* A detailed description of all activities that are needed or planned to implement effectively the recommended alternative for the cleanup and/or remediation of the nitrate groundwater contamination described in the Third SSFSRAP dated April 5, 2013.

- c. *Action Completion Schedule:* A schedule of implementation actions necessary to complete construction and begin operation of the seven-well extraction system, treatment system and disposal method described in the Design Report. The schedule should have specific completion date for: extraction well construction, FBR construction, pipelines, other appurtenances, and start up for extraction.
 - d. *Sampling and Analysis Plan:* A plan capable of accurately describing monitoring locations, sampling frequencies, field sampling procedures, sample collection and preservation methods, laboratory analytical methods, and laboratory quality assurance/quality control criteria.
2. By **November 29, 2013**, submit a status report describing the City's progress in meeting the actions and milestones required by this Order. The report shall provide justification for any delay encountered in implementing required actions.
3. By **September 30, 2014**, complete construction of all elements described in the Design Report and begin operation of the extraction, treatment and disposal system. Nitrate concentrations in extracted and treated groundwater shall not exceed 6.5 mg/L prior to disposal. Continue operating the extraction and treatment system until groundwater concentrations up gradient of the seven extraction wells achieve 6.5 mg/L nitrate. The City may request the Water Board to review the Order's requirements to continuously operate the extraction and treatment system until groundwater nitrate concentrations up gradient achieve 6.5 mg/L. The Water Board will review the City's proposal to modify or discontinue the operation of the treatment system, in whole or in part, in accordance with the Water Code, State Water Board Resolution 92-49, and other applicable law. The Water Board will grant or deny the City's proposal within ninety (90) days of receipt. Nothing in this Order prevents the City from later petitioning the State Water Board to review the Water Board's decision. Upon such petition, the Water Board will not assert that the City has previously waived or forfeited its right to petition the Regional Board's denial of its request for modification or discontinuance of the operation of the treatment system under Water Code section 13320.
4. By **October 31, 2014**, submit an as-built construction report describing all actions completed to construct the elements described in the Design Report. The report must be signed by a California registered civil engineer and may include the signature of a California registered professional geologist for extraction and monitoring well installation. The report shall include as a minimum:
 - a. Construction drawings of the completed system;
 - b. Final well construction drawings;
 - c. The results of a one-time groundwater sample collected from each new extraction or monitoring well, with analyses for general minerals including nitrate; and
 - d. The results of system startup and testing operations.
 - e. Groundwater elevation for the proposed seven extraction wells and all monitoring wells on the Soapmine Road area.

5. The City shall submit progress Self-Monitoring Reports as required in the attached Monitoring and Reporting Program to the Water Board's Victorville Office.

REPORTING REQUIREMENTS

1. **Signatory Requirements.** All reports required under this Cleanup and Abatement Order shall be signed and certified by the City or by a duly authorized representative of the City and submitted to the Water Board staff. A person is a duly authorized representative of the City only if: (1) the authorization is made in writing by the City and (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
2. **Certification.** Include the following signed certification with all reports submitted pursuant to this Order:

I certify under penalty of perjury under the laws of the State of California that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

3. **Duty to Use Registered Professionals.** The City shall provide documentation that plans and reports required under this Order are prepared under the direction of appropriately qualified professionals. California Business and Professions Code sections 6735, 7835, and 7835.1 require that engineering and geologic evaluations and judgments be performed by or under the direction of registered professionals. The responsible registered professional shall sign and affix his/her registration stamp to the report, plan, or document.
4. **Report Submittals.** All monitoring and technical reports required under this Order shall be submitted in both hard copy and electronically to:

California Regional Water Quality Control Board
Lahontan Region - Victorville Office
14440 Civic Drive, Suite 200
Victorville, CA 92392
Attn: Ghasem Pour-ghasemi
Email: pghasemi@waterboards.ca.gov
Phone: (760) 241-6583

B. NOTIFICATIONS

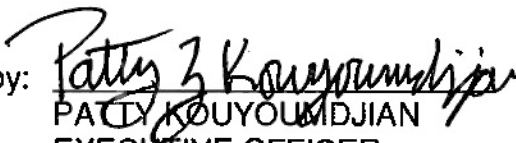
1. **Cost Recovery.** Pursuant to Water Code section 13304, the City shall be liable to the Water Board for all reasonable costs incurred by the Water Board to investigate unauthorized discharges of waste, or to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, pursuant to this Order. The City shall reimburse the Water Board for all reasonable costs associated with site investigation, oversight, and cleanup. Failure to pay any invoice for the Water Board's investigation and oversight costs within the time stated in the invoice (or within thirty days after the date of invoice, if the invoice does not set forth a due date) shall be considered a violation of this Order. If the Facility is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program.
2. **California Environmental Quality Act (CEQA) Compliance.** Issuance of this Order is an enforcement action taken by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) pursuant to California Code of Regulations, Chapter 3, title 14, section 15321 subdivision (a)(2). This action is also exempt from the provisions of CEQA in accordance with section 15308 of Chapter 3, title 14 of the California Code of Regulations, as this action is to assure maintenance, restoration, enhancement, or protection of the environment.
3. **Requesting Administrative Review by the State Water Board.** Any person aggrieved by an action of the Water Board that is subject to review as set forth in Water Code section 13320, subdivision (a), may petition the State Water Board to review the action. Any petition must be made in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition within 30 days of the date the action was taken, except that if the thirtieth day following the date the action was taken falls on a Saturday, Sunday, or state holiday, then the State Water Board must receive the petition by 5:00 p.m. on the next business day. Copies of the law and regulation applicable to filing petitions may be found on the internet at: <http://www.waterboards.ca.gov/publicnotices/petitions/waterquality> or will be provided upon request.

Nothing in this Order prevents the City from later petitioning the State Water Board to review the Regional Board decision denying the City's proposal to modify or discontinue the operation of the treatment system, in whole or in part, until groundwater nitrate concentrations up gradient achieve 6.5 mg/L. Upon such petition, the Water Board will not assert that the City has previously waived or forfeited its right to petition this action under Water Code section 13320.

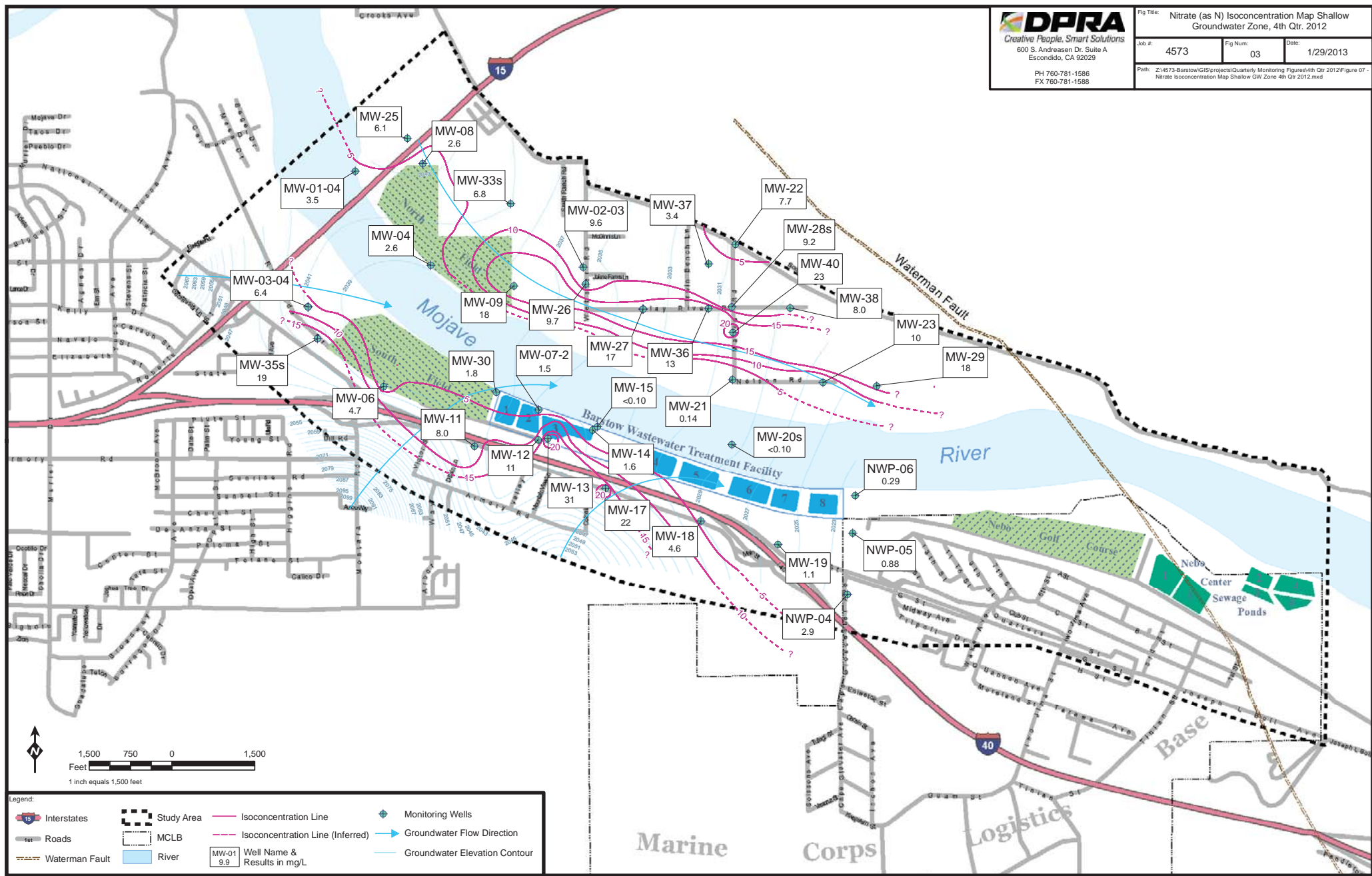
4. **Request for Extension of Time.** If for any reason, the City is unable to perform any activity or submit any document in compliance with the schedule set forth herein, or in compliance with any work schedule submitted pursuant to this Order and approved by the Executive Officer, the City may request, in writing, an extension of the time specified. The extension request must be submitted at least 10 days in advance of the deadline in question and shall include justification for any delay including a description of the good faith effort performed to achieve compliance with that deadline. The extension request shall also include a proposed time schedule to achieve compliance

extension request shall also include a proposed time schedule to achieve compliance with the new proposed deadlines. Any modification to this Order, including but not limited to extensions of deadlines, shall be in writing and approved by the Executive Officer or her delegate.

5. **No Limitation on Water Board Authority.** This Order does not limit the authority of the Water Board to institute additional enforcement actions and/or to require additional investigation and cleanup of the site consistent with the Water Code. This Order may be revised by the Executive Officer or her delegate as additional information becomes available.
6. **No Limitation on Enforceability of Previously Issued Orders.** This Order does not affect the Discharger's obligation to comply with any previously issued Orders, including but not limited to Cleanup and Abatement Order R6V-2007-0017. The requirements and legal enforceability of any previously issued Order is not superseded or affected upon issuance of this Order.
7. **Enforcement Notification.** Failure to comply with the requirements of this Cleanup and Abatement Order may subject the City to additional enforcement action, including, but not limited to, the imposition of administrative civil liability pursuant to Water Code sections 13268 and 13350, or referral to the Attorney General of the State of California for injunctive relief or civil or criminal liability. Pursuant to Water Code section 13350, \$5,000 in administrative civil liability may be imposed for each day in which the violation(s) occurs under Water Code section 13304; and pursuant to Water Code section 13268, \$1,000 in administrative civil liability may be imposed for each day in which the violation(s) occurs under Water Code section 13267.

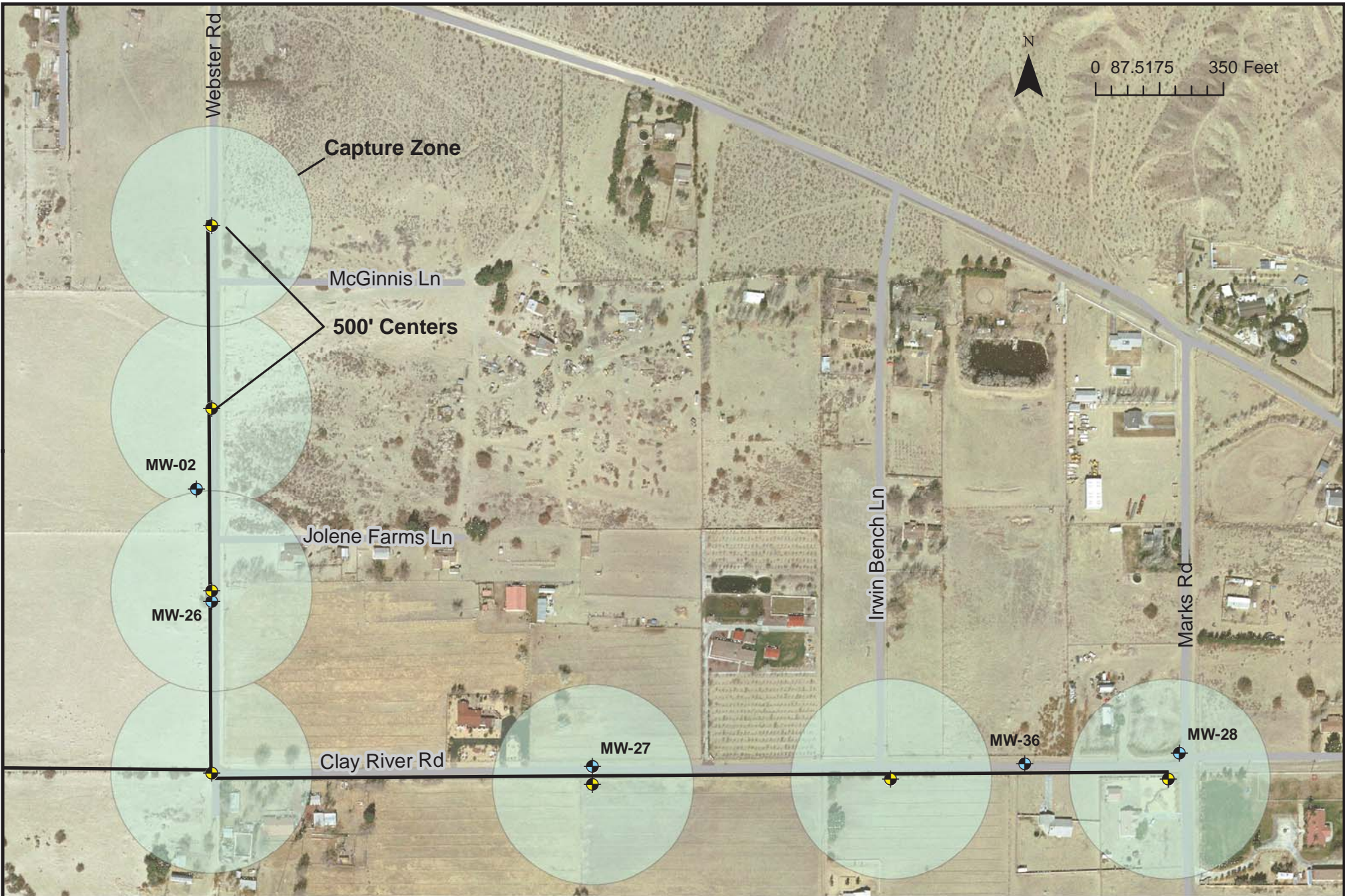
Ordered by:  Dated: July 2, 2013
PATTY KOUYOUMDJIAN
EXECUTIVE OFFICER

- Attachments:
- A. Map - Nitrate Nitrogen Plume Map in Soapmine Road Area
 - B. Map - Groundwater Extraction System with seven wells
 - C. Water Code Section 13267 Fact Sheet
 - D. Monitoring and Reporting Program



Legend:

- Interstates
- Roads
- Waterman Fault
- Study Area
- MCLB
- River
- Well Name & Results in mg/L
- Isoconcentration Line
- Isoconcentration Line (Inferred)
- Monitoring Wells
- Groundwater Flow Direction
- Groundwater Elevation Contour



600 S. Andreasen Drive, Suite A
Escondido, CA 92029

Phone: 760.781.1586
Fax: 760.781.1588

Legend

-  Well
-  Proposed Extraction Well



-  12" Pipeline
-  8" Pipeline

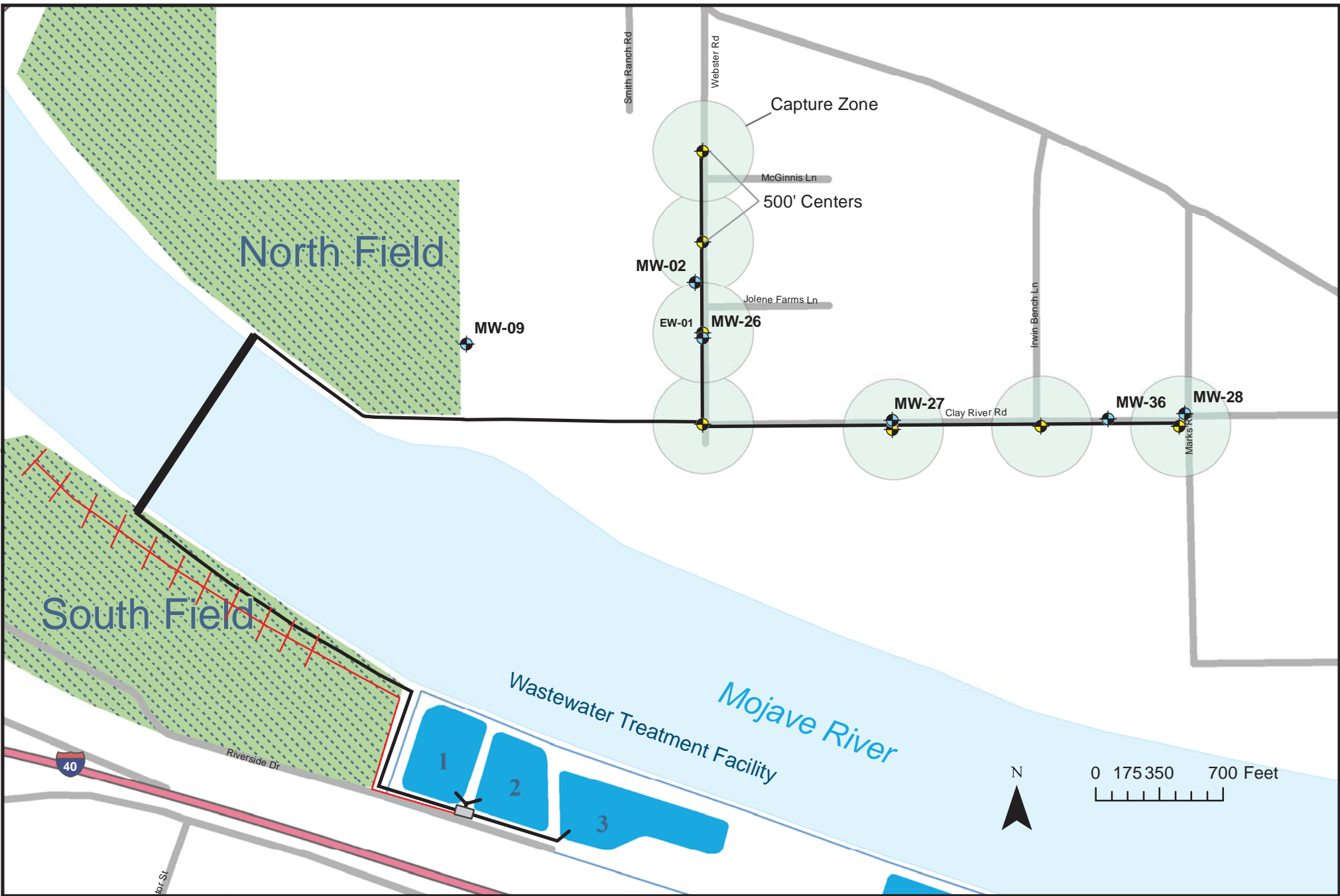
Fig Title: Proposed Groundwater Extraction Well Locations

Job Num: 04573

Fig Num: 1

Date: 3/21/2012

Path: Proposed Groundwater Extraction Well Locations.mxd



600 S. Andreasen Drive, Suite A
Escondido, CA 92029

Phone: 760.781.1586
Fax: 760.781.1588

Legend

Concrete Pad

Existing Well

Proposed Extraction Well

Pond

River

12" Pipeline

8" Pipeline

Infiltration Gallery

Fig Title: Proposed Groundwater Extraction Conveyance Schematic

Job Num: 04573

Fig Num: 2

Date: 3/21/2012

Path: Proposed Groundwater Extraction Conveyance Schematic.mxd

**Fact Sheet – Requirements for Submitting Technical Reports
Under Section 13267 of the California Water Code**

October 8, 2008

What does it mean when the regional water board requires a technical report?

Section 13267¹ of the California Water Code provides that "...the regional board may require that any person who has discharged, discharges, or who is suspected of having discharged...waste that could affect the quality of waters...shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires".

This requirement for a technical report seems to mean that I am guilty of something, or at least responsible for cleaning something up. What if that is not so?

Providing the required information in a technical report is not an admission of guilt or responsibility. However, the information provided can be used by the regional water board to clarify whether a given party has responsibility.

Are there limits to what the regional water board can ask for?

Yes. The information required must relate to an actual or suspected discharge of waste, and the burden of compliance must bear a reasonable relationship to the need for the report and the benefits obtained. The regional water board is required to explain the reasons for its request.

What if I can provide the information, but not by the date specified?

A time extension can be given for good cause. Your request should be submitted in writing, giving reasons. A request for a time extension should be made as soon as it is apparent that additional time will be needed and preferably before the due date for the information.

Are there penalties if I don't comply?

Depending on the situation, the regional water board can impose a fine of up to \$1,000 per day, and a court can impose fines of up to \$25,000 per day as well as criminal penalties. A person who submits false information is guilty of a misdemeanor and may be fined as well.

What if I disagree with the 13267 requirement and the regional water board staff will not change the requirement and/or date to comply?

Any person aggrieved by this action of the Regional 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 of the Order, except that if the thirtieth day following the date of this Order 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.

Claim of Copyright or other Protection

Any and all reports and other documents submitted to the Regional Board pursuant to this request will need to be copied for some or all of the following reasons: 1) normal internal use of the document, including staff copies, record copies, copies for Board members and agenda packets, 2) any further proceedings of the Regional Board and the State Water Resources Control Board, 3) any court proceeding that may involve the document, and 4) any copies requested by members of the public pursuant to the Public Records Act or other legal proceeding.

If the discharger or its contractor claims any copyright or other protection, the submittal must include a notice, and the notice will accompany all documents copied for the reasons stated above. If copyright protection for a submitted document is claimed, failure to expressly grant permission for the copying stated above will render the document unusable for the Regional Board's purposes, and will result in the document being returned to the discharger as if the task had not been completed.

If I have more questions, who do I ask?

Requirements for technical reports normally indicate the name, telephone number, and email address of the regional water board staff person involved at the end of the letter.

¹ All code sections referenced herein can be found by going to www.leginfo.ca.gov. Copies of the regulations cited are available from the Regional Board upon request.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

MONITORING AND REPORTING PROGRAM NO. R6V-2013-0045

**WDID NO. 6B360101001
FOR**

City of Barstow

San Bernardino County

California Water Code sections 13267 and 13383 authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements consistent with the California Water Code. This MRP serves as a supplement to Cleanup and Abatement Order R6V-2013-0045 for this facility. The City of Barstow shall monitor at the specified intervals and report by **January 15, 2014** and quarterly thereafter on **April 15, July 15, October 15, and January 15** of each year or until an amended Monitoring and Reporting Program consolidating the monitoring requirements of Water Board Order No. 6-94-26, Cleanup and Abatement Order No. R6V-2007-0017, and this Order is adopted in the next upcoming fiscal year, whichever occurs sooner. The following information shall be reported.

I. MONITORING

A. Groundwater extraction system performance

- a. The operational performance for each extraction well, volume pumped, and on/off period of pumps for the reporting period;
- b. Current and historical system performance data illustrated by graphs, charts, and tabular data;
- c. Tabulated and laboratory analytical results for nitrate as nitrogen concentration from each extraction well head collected quarterly after system start up;
- d. Tabulated and laboratory analytical results for nitrate as nitrogen concentrations from each monitoring well in the Soapmine road area.
- e. Nitrate groundwater iso-concentration maps for the Soapmine Road area (showing the 5, 6.5, 10, 15, and 20 milligrams/liter (mg/L) contours) overlaid with groundwater elevations and groundwater flow direction(s) on maps at an appropriate scale;
- f. Groundwater elevations from the operating extraction wells, any new monitoring wells installed to monitor the extent of drawdown from the extraction wells, and all existing monitoring wells on the north side of the Mojave River collected monthly for the first quarter after the extraction system begins operation and quarterly thereafter. The data should include recording date, depth to groundwater, and groundwater elevation reading for each well. Describe whether there were volume reductions in the storage capacity and whether groundwater drawdown has stabilized;

- g. A technical evaluation regarding with the effectiveness of cleaning up and abating groundwater pollution emanating from the north irrigation field;
- h. A technical evaluation, and map showing, groundwater drawdown with intervals of a one foot minimum to the outer reaches of the capture zone; and
- i. A technical evaluation of measured groundwater elevation changes versus the predicted changes and whether pumping rates of 1000gallons/minute are sustainable.

B. Extracted groundwater treatment system performance

- a. The operational performance of the treatment system for the reporting period;
- b. Current and historical system performance data illustrated by graphs, charts, and tabular data;
- c. Results of treatment system effluent samples analyzed for nitrate as nitrogen, pH, and Total Kjeldahl Nitrogen collected weekly for the first 30-days following system start-up, and monthly thereafter.
- d. A technical evaluation of whether the fluidized bed reactor treatment system has reduced nitrate as nitrogen concentrations in treated effluent to below 6.5 mg/L for the period.
- e. A technical evaluation of the fluidized bed reactor treatment system performance (including the range and monthly averages of effluent concentrations of nitrate); and
- f. Records of technical, operational problems during the year and duration of down time;

C. Ponds and other discharge locations

- a. Statement, and map showing, which percolation ponds, or other locations, are used to dispose treated water;
- b. Freeboard measurement for each disposal percolation pond from the lowest elevation point on the embankment;
- c. A technical evaluation of whether disposal percolation pond freeboard maintains compliance with a two-foot minimum freeboard as required in the waste discharge requirements; and

D. Other information

- a. A technical evaluation of how the seven-well extraction system hydraulically captures nitrate-polluted groundwater from the northern reclamation field;
- b. A table showing the balance of extraction well volume and treatment system discharge volume for each month;
- c. A technical evaluation of the effect of the extraction well system relative to existing perchlorate in up gradient groundwater within the Soapmine Road area; and

- d. An annual technical evaluation of the groundwater extraction system's performance and ability to capture, remove and treat nitrate-contaminated groundwater. The annual report shall describe system performance relative to predicted computer model simulations or any other acceptable technical means of evaluating the overall effectiveness of the treatment system. The annual report shall be submitted on January 15th of each year. If the groundwater extraction system performs below the established performance standards, reevaluation and modifications of the treatment system may be necessary and may include examining alternate treatment and disposal options consistent with State Water Board Resolution 92-49.

The Discharger shall comply with the "General Provisions for Monitoring and Reporting", dated September 1, 1994, which is attached to and made part of this Monitoring and Reporting Program.

Ordered by: Patty Z. Kouyoumdjian dated: July 2, 2013
PATTY KOUYOUMEJIAN
EXECUTIVE OFFICER

Attached: General Provisions for Monitoring and Reporting, September 1, 1994

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

GENERAL PROVISIONS
FOR MONITORING AND REPORTING

1. **SAMPLING AND ANALYSIS**

- a. All analyses shall be performed in accordance with the current edition(s) of the following documents:
 - i. Standard Methods for the Examination of Water and Wastewater
 - ii. Methods for Chemical Analysis of Water and Wastes, EPA
- b. All analyses shall be performed in a laboratory certified to perform such analyses by the California State Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.
- c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than EPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.
- d. The Discharger shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved Sampling and Analysis Plan (SAP). The most recent version of the approved SAP shall be kept at the facility.
- e. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book described in 2.b, below.
- f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.
- g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever period is shorter.

2. OPERATIONAL REQUIREMENTS

a. Sample Results

Pursuant to California Water Code Section 13267(b), the Discharger shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

b. Operational Log

Pursuant to California Water Code Section 13267(b), an operation and maintenance log shall be maintained at the facility. All monitoring and reporting data shall be recorded in a permanent log book.

3. REPORTING

- a. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.
- b. Pursuant to California Water Code Section 13267(b), all sampling and analytical results shall be made available to the Regional Board upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- c. The Discharger shall provide a brief summary of any operational problems and maintenance activities to the Board with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.
- d. Monitoring reports shall be signed by:
 - i. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates;
 - ii. In the case of a partnership, by a general partner;
 - iii. In the case of a sole proprietorship, by the proprietor; or

- iv. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
- e. Monitoring reports are to include the following:
 - i. Name and telephone number of individual who can answer questions about the report.
 - ii. The Monitoring and Reporting Program Number.
 - iii. WDID Number.
- f. Modifications

This Monitoring and Reporting Program may be modified at the discretion of the Regional Board Executive Officer.

4. NONCOMPLIANCE

Under Section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation under Section 13268 of the Water Code.