



STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
District I

TOM BLAINE, P.E.
STATE ENGINEER

5550 San Antonio Drive NE
Albuquerque, NM 87109-4127
(505) 383-4000

August 31, 2018

ATTN: Mr. Jonathan Brohard
IMH Financial Corporation
7001 N. Scottsdale Rd. Ste. 2050
Scottsdale, AZ 85253

RE: Notice of Intention RG-88934 to Drill Wells to Appropriate Nonpotable Groundwater pursuant to NMSA Sections 72-12-25 through 72-12-28: Review of Notice of Intention and associated submittals.

Dear Mr. Brohard:

On June 16, 2006, *Notice of Intention to Appropriate Non-potable Groundwater at Greater Depths than 2,500 Feet Pursuant to NMSA § 72-12-26* (NOI) was filed with the New Mexico Office of the State Engineer (OSE) for a combined diversion amount of 16,000 acre-feet per annum from wells RG-88934 PODs 1-3 and PODs 25-35, for domestic, irrigation, municipal, industrial, commercial, and subdivision and related purposes of use with a specific use of community water supply for the Rio West Master Planned District. The NOI was filed in the names of: Recorp New Mexico Associates, LP; Butera Properties, LLC; Carinos Properties, LLC; Recorp New Mexico Associates II, LP; Recorp New Mexico Associates III, LP; & Tesoro Properties, LLC.

The place of use is described in the NOI as Section 8 (Part), Section 7 (Part), Section 17 (Part), Section 18 (all), Section 20 (Part), Section 19 (all), Section 29 (Part), Section 30 (all), Section 31 (Part) and Section 32 (Part) of Township 12 North, Range 1 East; Section 3 (all), Section 4 (Part), Section 2 (all), Section 9 (Part), Section 12 (Part), Section 11 (all), Section 10 (all), Section 14 (all), Section 13 (all), Section 15 (all), Section 16 (Part), Section 21 (Part), Section 22 (all), Section 24 (all), Section 23 (all), Section 28 (Part), Section 33 (Part), and Section 36 (all) of Township 12 North, Range 1 West PLSS, as shown in Map 1, attached.

On February 20, 2007, the State Engineer did approve *Application for Permit to Drill an Exploratory Well* for RG-88934 PODs 1-3, in the name of Aperion Companies as the parent company for all entities listed on the NOI.

Through subsequent communication with Aperion Companies, the OSE has received additional data and information, referred to as the "Aperion filing", and which fulfill, or partially fulfill, the OSE filing requirements pursuant to NMSA 1978, §§ 72-12-25 through 72-12-28.

The Aperion filing includes: Affidavits of Publication from the *Sandoval Sentinel* dated April 21, 28, and May 5, 2006, for NOI to drill fourteen wells, Well Nos. 1 through 14 (*i.e.*, RG-88934 PODs 1-3 and PODs 25-35), to appropriate 16,000 acre-feet per annum from all fourteen wells combined; approved Exploratory Permit and Artesian Well Plan of Operations for RG-88934-POD1 and RG-88934-POD2; Well Record and Log with detailed lithology log and other relevant data for RG-88934-POD1 and RG-88934-POD2; and laboratory analysis of water chemistry for samples collected on March 14, 2011, at RG-88934-POD1 wellhead and October 16, 2008, at RG-88934-POD2 wellhead.

Pursuant to NMSA 1978, § 72-12-25, only appropriations from an aquifer the top of which is 2,500 feet or more below the ground surface at any location at which a well is drilled, and which contains only nonpotable water (1,000 parts per million or greater dissolved solids), may proceed pursuant to NMSA 1978, §§ 72-12-25 through 72-12-28.

Aperion reports for RG-88934-POD1 a total well depth of 6,460 feet below ground surface, and top of the Agua Zarca Sandstone at 3,275 feet below ground surface. For RG-88934-POD2 a total well depth of 3,840 feet below ground surface, and top of San Andres Formation at 3,719 feet below ground surface are reported. Water from the aquifers developed in the Agua Zarca Sandstone vertically downward through the San Andres Formation, Glorieta Sandstone, and producing intervals of the Yeso Formation, Abo Formation, Madera Group, Sandia Formation, and any uppermost fractured Pre-Paleozoic basement rock sampled from well RG-88934-POD1 had an average total dissolved solids (TDS) content of 12,400 milligrams per liter. Water from the aquifer developed in the San Andres – Glorieta Formations sampled from well RG-88934-POD2 had an average TDS content of 12,000 milligrams per liter.

Filings submitted by Aperion for wells RG-88934-POD1 and RG-88934-POD2 have demonstrated that the top of the aquifer at the well locations is greater than 2,500 feet below land surface, and the dissolved solids content of the water in the aquifer is greater than 1,000 parts per million.

On September 26, 2017, the OSE received a letter from IMH Financial Corporation (IMH) via Maria O'Brien, Esq., stating that "IMH Financial Corporation has obtained ownership interests in the Notices of Intent to Appropriate" including the one identified by OSE File No. RG-88934.

Permits to repair RG-88934-POD1 and RG-88934-POD2 were issued on August 28, 2017 by the OSE. On July 24, 2018, the OSE received the final report from the project engineer, Mr. Gary Lee, P.E., stating that the repairs to both wells were successful and that both wells were equipped with bridge plugs, rendering pumping/flow impossible until the plugs are retrieved. The OSE received the Well Records & Logs from the well driller, Alpha Southwest, Inc., on July 30, 2018,

confirming the repair work described in the project engineer's final report.

Based upon the data submitted thus far and made available, the State Engineer accepts, at this time, the assertions of the Notices of Intention that wells RG-88934-POD1 and RG-88934-POD2 will appropriate water from aquifers in accordance with NMSA 1978, §§ 72-12-25 through 72-12-28.

The State Engineer requires that IMH submit meter diversions from wells RG-88934-POD1 and RG-88934-POD2 on a quarterly basis and water chemistry results annually to ensure the total dissolved solid concentration remains "non-potable" as defined in statute. In order to monitor changes in that chemistry and ensure those concentrations remain "non-potable" as defined by that same section, IMH will be required to annually sample and test water chemistry for each well and report these data to the District I Office of the State Engineer in Albuquerque upon removal of the bridge plugs and in accordance with the following conditions:

1. All wells shall be equipped with OSE approved totalizing meters installed before the first branch of the discharge line from the well and the installation shall be acceptable to the State Engineer. Records of the amount of water diverted from each well during the preceding three calendar months shall be submitted in writing to the OSE on or before the 10th day of January, April, July and October of each year. No water shall be pumped or allowed to flow from any well unless equipped with a functional totalizing meter designed to continuously and digitally record the pumping/flow rate.
2. IMH shall provide in writing the make, model, serial number, number of dials, initial meter reading, units of measure, multiplier, and the date of installation of each meter to the State Engineer.
3. Representative samples of water diverted shall be collected annually and analyzed by a certified laboratory for concentrations of major anions and cations, alkalinity, specific conductance, and total dissolved solids (TDS). Purge and sampling protocol in general shall follow industry standards and be acceptable to the State Engineer. Samples shall be taken as close to the wellhead as practicable, before the first branch of the discharge line and prior to any treatment or blending with other water sources. Field measurement of pH, temperature, and fluid conductivity shall be made at the time of sampling. Laboratory reports and results shall be submitted in writing to the OSE on an annual basis on or before the 10th day of January for the preceding calendar year. If the water chemistry reflects a significant change in quality of water from the initial water quality information provided for this authorization, the OSE may send notification that more frequent sampling must occur, up to quarterly analysis, from that point forward. If meter readings reflect no water was diverted during a calendar year, IMH shall inform the State Engineer in writing that no samples will be taken for that year.
4. Upon receipt of annual water chemistry measurements, the State Engineer may review the data for compliance with NMSA 1978, §§ 72-12-25 through 72-12-28. If IMH fails to meet the requirements, a permit to appropriate groundwater may be required from the State Engineer.

5. IMH shall allow the State Engineer and his representatives to access the wells and surrounding sites and make available all records for water chemistry monitoring and meter readings (NMSA § 72-12-27) upon request.
6. Results from future well tests, including pumping tests, well casing integrity, etc., shall be submitted to the District I Office of the State Engineer.
7. IMH shall install cathodic protection on the wells prior to removal/drilling out of the bridge plugs.
8. Prior to any diversion of groundwater as described in this letter, the well owner shall acquire valid, consumptive use water rights acceptable to the State Engineer in the amount of 0.73% of the maximum allowed diversion to offset depletions on the Jemez River.
9. Prior to any diversion of groundwater as described in this letter, the well owner shall acquire valid, pre-1907 consumptive use water rights acceptable to the State Engineer to offset depletions in the amount of 1.1% of the maximum allowed diversion on the mainstem Rio Grande.
10. These conditions shall be binding upon any successor-in-interest to IMH.
11. The State Engineer retains jurisdiction over this authorization.

The Office of the State Engineer concludes that requiring these offsets are reasonable and protective over the fully appropriated Jemez/ Rio Grande Stream systems. If you have any questions regarding the above stated requirements, please call myself or Ghassan Musharrafieh at (505) 827-6120.

Sincerely,



John T. Romero, P.E.
Director, WRAP Program/Water Rights Division

cc: District I Office (Water Rights Division) – Mr. Wayne Canon, District Manager
Statewide Projects – Ms. Jerri Pohl
Hydrology Bureau – Dr. Ghassan Musharrafieh, Hydrology Bureau Chief
Litigation and Adjudication Program (LAP) – Maureen Dolan, Esq., Acting ALU
Managing Attorney

Encl: Hydrology Bureau Technical Memorandum, dated August 25, 2018
Map 1- RG-88934 NOI Place of Use and Ownership

**TECHNICAL MEMORANDUM
OFFICE OF THE STATE ENGINEER
HYDROLOGY BUREAU**

DATE: August 25, 2018

TO: *JR* John Romero, Director, WRAP
David Anderson, Supervisor, WRAP District 1

THROUGH: Ghassan Musharrafieh, Chief, Hydrology Bureau *GM*

FROM: Eric Keyes, Hydrologist, Hydrology Bureau *EJK*

SUBJECT: RG-88934, evaluation of surface water impacts from pumping of 16,000 AFY

Evaluation summary

RG-88934 deep pumping of 16,000 AFY impacts the Jemez River/Rio Grande surface water system by 32.4 AFY after 40-years and by 293 AFY after 100-years.

Evaluation details

A John Shomaker & Associates, Inc. (JSAI) model was modified and used to evaluate surface water impacts due to pumping of 16,000 AFY from RG-88934 deep wells, screened in the San Andres/Glorieta and located 18 miles west of the Rio Rancho portion of the Rio Grande.

An earlier version of the JSAI model was used in the evaluation. The earlier model is more in line with how a basin would be administered by the OSE. It has the geologic representation and the key perennial boundaries of the Jemez River and the Rio Grande without the implementation of RIV2 or LAK2 for stream routing and well borehole storage.

Some boundary conditions of the model were modified and the results interpreted differently than in the JSAI reports. Head dependent boundaries representing mountain front recharge were changed to a constant specified flux in the projection. Impacts to the recharge boundary around Mount Taylor may have been attributed to impacts on the ephemeral Rio San Jose/Rio Puerco system. There are no impacts to this boundary due to pumping in the modified version.

The drain boundary was modified in a similar manner. It's not clear from the documentation but the drains were placed along the Rio Grande and look to act as an evapotranspiration boundary. The boundary impacts may have been added to impacts on the Rio Grande. The drain boundary was modified to a constant specified flux in projections. There are no impacts to this boundary due to pumping in the modified version.

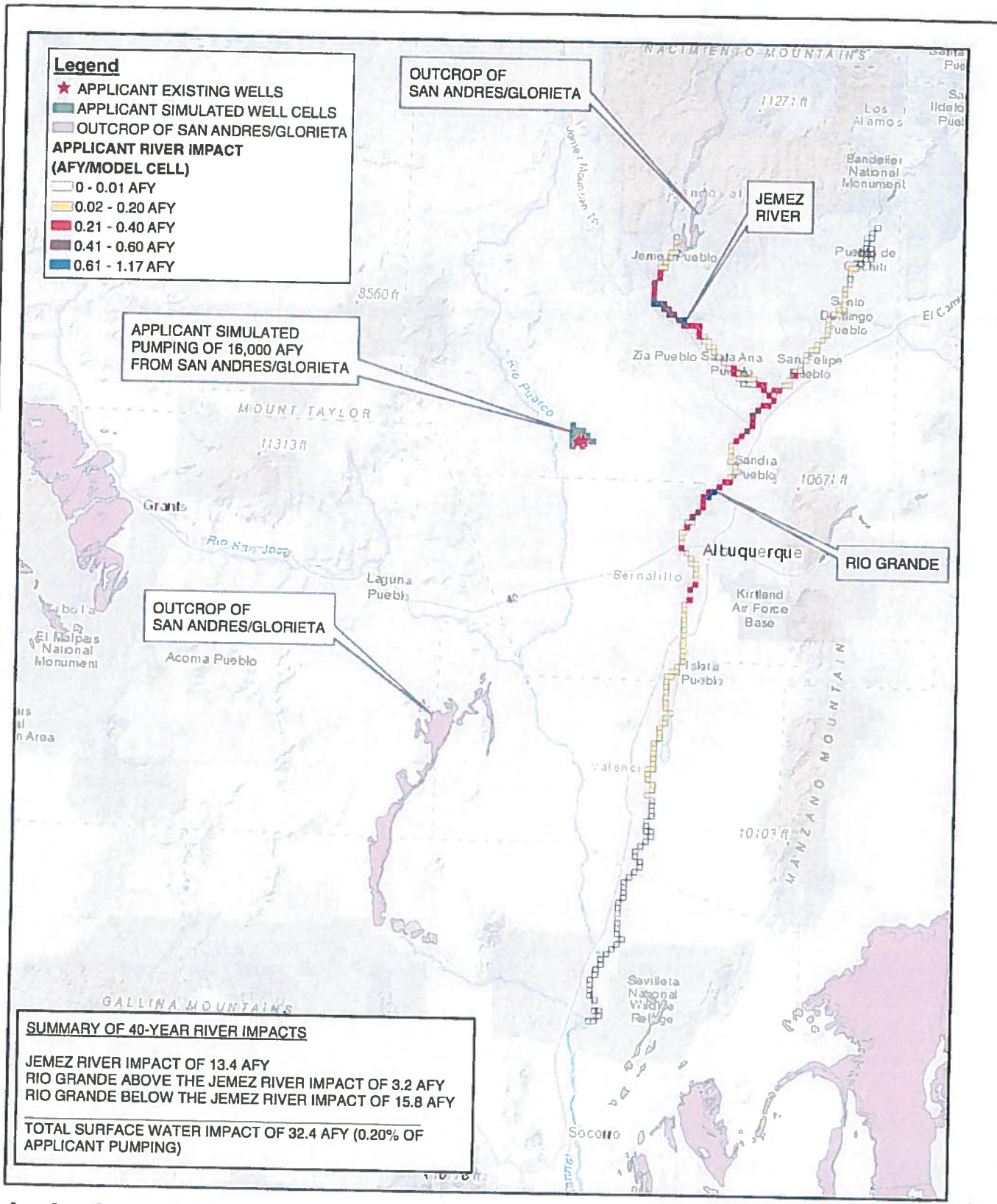
With the modifications, applicant pumping induces flow primarily from aquifer storage and from reduced flows of the Jemez River and the Rio Grande.

The Rio San Jose and the Rio Puerco are not perennial reaches in their intersections where the San Andres/Glorieta outcrops or is close to the surface. Drawdown due to deep pumping will primarily follow the San Andres/Glorieta to the source of unconfined storage at the outcrops. Pumping from the deep wells will not impact the ephemeral flood flows of these reaches.

The future deep aquifer pumping locations were estimated from the two existing wells (RG-88934-POD1 and POD2). Total pumping of 16,000 AFY was distributed among 14 model cells. The locations are shown in figure 1. The simulated pumping is from San Andres/Glorieta in model layer 7. Two model projections were compared, with and without the RG-88934 deep pumping. The difference in the two model projection impacts are the impacts due solely to the RG-88934 deep aquifer pumping.

Figure 1 also shows the areal distribution of surface water impacts due to 40-years of deep well pumping. The Jemez River and the Rio Grande below the Jemez show the largest impacts.

Figure 2 show the temporal distribution of surface water impacts. After 40-years, the flow on the Jemez/Rio Grande system is reduced by the deep pumping by 32.4 AFY. That impact is 0.20% of the applicant pumping. After 100 years, the impact is 293 AFY (1.83% of applicant pumping).



Legend

- ★ APPLICANT EXISTING WELLS
- APPLICANT SIMULATED WELL CELLS
- OUTCROP OF SAN ANDRES/GLORIETA

APPLICANT RIVER IMPACT (AFY/MODEL CELL)

- 0 - 0.01 AFY
- 0.02 - 0.20 AFY
- 0.21 - 0.40 AFY
- 0.41 - 0.60 AFY
- 0.61 - 1.17 AFY

APPLICANT SIMULATED PUMPING OF 16,000 AFY FROM SAN ANDRES/GLORIETA

OUTCROP OF SAN ANDRES/GLORIETA

OUTCROP OF SAN ANDRES/GLORIETA

JEMEZ RIVER

RIO GRANDE

SUMMARY OF 40-YEAR RIVER IMPACTS

JEMEZ RIVER IMPACT OF 13.4 AFY
 RIO GRANDE ABOVE THE JEMEZ RIVER IMPACT OF 3.2 AFY
 RIO GRANDE BELOW THE JEMEZ RIVER IMPACT OF 15.8 AFY

TOTAL SURFACE WATER IMPACT OF 32.4 AFY (0.20% OF APPLICANT PUMPING)

0 5 10 20 Miles



FIGURE 1
DISTRIBUTION OF IMPACTS ON THE RIO GRANDE
AFTER 40-YEARS OF PUMPING 16,000 AFY
FROM THE DEEP SAN ANDRES/GLORIETA AQUIFER
OF THE RG-88934 WELL FIELD

MAP AREA

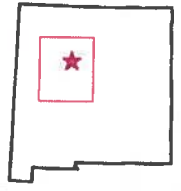
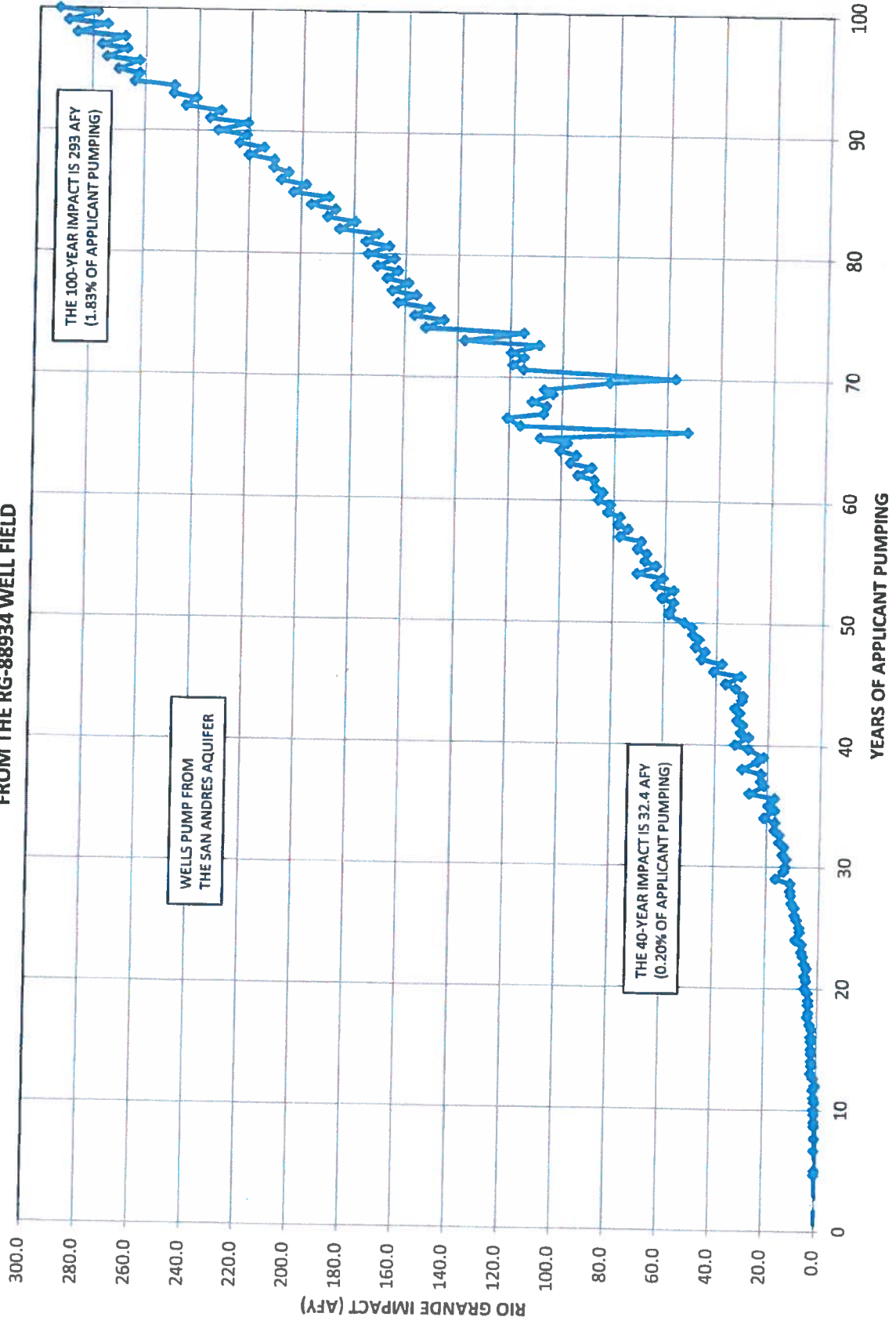
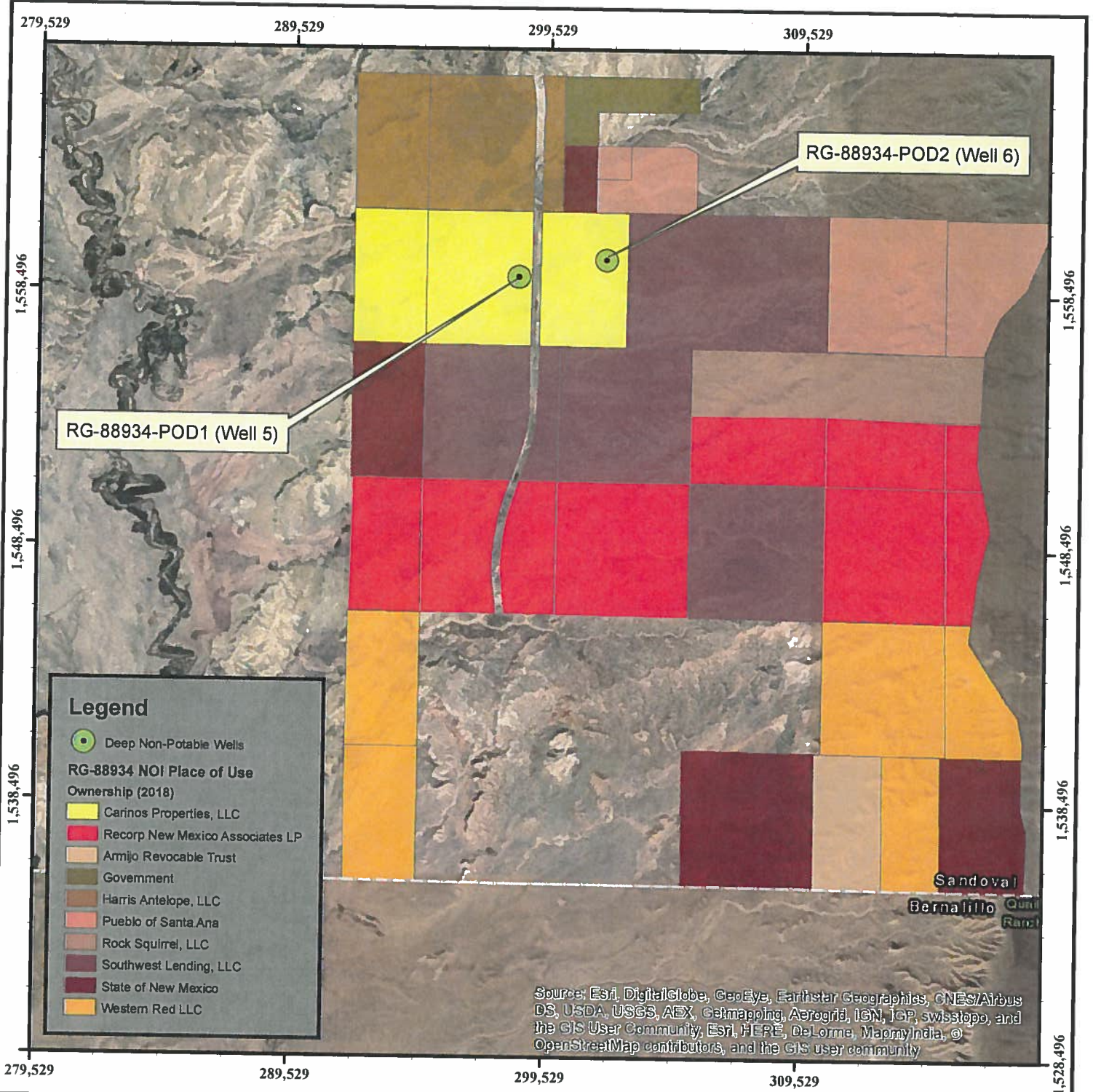


FIGURE 2
IMPACT ON THE JEMEZ RIVER/RIO GRANDE DUE TO 16,000 AFY PUMPING
FROM THE RG-88934 WELL FIELD





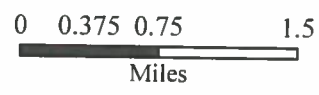
Legend

- Deep Non-Potable Wells
- RG-88934 NOI Place of Use Ownership (2018)**
- Carinos Properties, LLC
- Recorp New Mexico Associates LP
- Amijo Revocable Trust
- Government
- Harris Antelope, LLC
- Pueblo of Santa Ana
- Rock Squirrel, LLC
- Southwest Lending, LLC
- State of New Mexico
- Western Red LLC

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community



Map 1: RG-88934 NOI Place of Use and Ownership*



*Place of use based on OSE interpretation of description in legal notice.



STATE OF NEW MEXICO
Office of the State Engineer
Tom Blaine, P.E.,
State Engineer

COORDINATE SYSTEM
NMSPCS NAD 27
Central Zone, feet

map by David B. Anderson
August 8, 2018

File No. RG-88934

