

**E&B NATURAL RESOURCES
MANAGEMENT CORP. BRIEF
REGARDING PROPOSED CLEANUP AND
ABATEMENT ORDER**

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9 BEFORE THE CALIFORNIA REGIONAL WATER QUALITY
10 CONTROL BOARD FOR THE CENTRAL VALLEY REGION

11 In the Matter of:

12 Consideration of Cleanup and Abatement
13 Order for E&B Natural Resources
14 Management Corp for the Gov't Lease, Poso
15 Creek Oil Field, Kern County,

**E&B NATURAL RESOURCES
MANAGEMENT CORP. BRIEF
REGARDING PROPOSED CLEANUP
AND ABATEMENT ORDER**

Date: June 4, 2015 and June 5, 2015
Time: 8:30 AM

16 **I.
INTRODUCTION**

17 The primary issue at hand is whether the California Regional Water Quality
18 Control Board, Central Valley Region (Board) should require the extensive investigations
19 pursuant to California Water Code Section 13267 as outlined in the proposed Cleanup and
20 Abatement Order (CAO) for E&B Natural Resources Management Corp (E&B Natural
21 Resources) for its Gov't Lease in the Poso Creek Oil Field, Kern County.

22 Extensive monitoring and waste characterization for the Gov't Lease has been
23 submitted to the Board pursuant to waste discharge orders . E&B Natural Resources requests that
24 the Board not adopt the groundwater investigations as specified in the proposed CAO as sufficient
25 data and analysis exists to demonstrate that past oil field production discharges have not
26 impacted groundwater.

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1 **II.**
2 **FACTUAL BACKGROUND**

3 In August 2010, E&B Natural Resources acquired four leases within the McVan
4 Area of the Poso Creek Oil Field. These leases are: the Gov't lease (Section 14); the New Hope
5 (Section 11); the Enas fee (Section 15); and the Claflin (Section 10) all located within T27S,
6 R27E, MDB&M. (See Finch Decl. 1.)

7 All production from the four leases is directed to the Gov't lease facility where
8 crude oil and produced water are separated in a process that does not include sumps. (Id, at 2 and
9 E&B Exhibit A)

10 After separation at the Gov't lease, the produced water is directed to the Enas fee
11 water facility and subsequently disposed of into three injection wells, either on the Enas fee (Enas
12 Fee WD1) or the Claflin lease (Claflin 12 and Claflin 10), permitted by Division of Oil, Gas,
13 Geothermal Resources, (DOGGR). (Id, at 3 and E&B Exhibit B)

14 When E&B Natural Resources acquired the McVan Area leases in the Poso Creek
15 Oil Field, two sumps on the Gov't lease were in the oil/water separation stream. (Id at 5 and E&B
16 Exhibit D)

17 In December, 2012, E&B Natural Resources received approval (Sundry Notice)
18 from the United States Department of Interior, Bureau of Land Management (BLM) to remove
19 tanks, sumps, and associated facilities located on the Section 14 lease (Gov't lease) of the McVan
20 Area of the Poso Creek Oil Field. The approval contains numerous requirements including testing
21 and environmental safeguards. (Id at 6 and E&B Exhibit E)

22 E&B Natural Resources has performed considerable work pursuant to the approved
23 Sundry Notice including removal of the sumps from the oil/water separation stream. E&B Natural
24 Resources has removed all valves and connections to prevent unauthorized discharges as noted by
25 Board staff in its December 11, 2014 inspection due to pumpers dewatering stock tanks for sale
26 into the sumps instead of circulating the water back into the wash tanks for injection. Additional
27 improvements include removal, replacement and upgrading of three tanks near ponds 1 and 2,
28 removal of nine decrepit production and ancillary tanks at the main Gov't production facility and

1 replacement and/or upgrading four production tanks as a part of the overall demolition project.
2 E&B has proposed a time line or schedule to complete remaining facility improvements and sump
3 closure by December 15, 2015 that requires both Board and BLM approval. (Id at 7 and E&B
4 Exhibit F)

5 Oil Field operations in the McVan Area have occurred since the late 1920's.
6 Historical disposal of production water was to ephemeral streams tributary to or to Poso Creek.
7 The Gov't Lease and the McVan Area were previously subject to regulation and permits by the
8 Board since at least January 26, 1979 through August 1996 for oil field production waters
9 discharged to an ephemeral stream tributary to Poso Creek. Prior operators included: *Rainbow Oil*
10 *Company*. NPDES Permit No. CA 0078336 adopted on January 26, 1979;. *Elf Aquitaine Oil and*
11 *Gas Inc.* Order No. 82-140, NPDES No. CA 0078336 adopted on December 1982. (E&B Exhibit
12 G; *Naftex Holdings, Ltd.* Order No. 94-213, NPDES Permit No. CA 0078336 adopted on August
13 5, 1994; (*Id.* at 8 and E&B Exhibit H) and *Bellaire Oil Company*, 1996. (*Id.* at 8 and E&B Exhibit
14 I).

15 These Permits all contained effluent limitations implementing the Tulare Lake
16 Basin Salinity Standards for Specific Electrical Conductance, Chlorides and Boron. (Id at 9)

17 Data analyses submitted by Rainbow Oil Company, Elf Aquitaine Oil and Gas, Inc.
18 and Bellaire Oil Company pursuant to their NPDES permits to the Regional Board demonstrated
19 that the produced waster complied with all the salinity and oil and grease limits. (Id at 10 and
20 E&B Exhibit J)

21 In response to directives from the BLM in 1996, discharges to the ephemeral
22 stream were terminated and production water from the Gov't Lease was disposed of to injection
23 wells. (Id at 11 and 12 and Exhibits K and L)

24 In March, 2015, E&B Natural Resources provided a sample of production water
25 generated at the Gov't lease facility prior to disposal by injection to ZALCO Laboratories for
26 analysis . The water quality of the production water was as follows: Electrical Conductivity, 500
27 micromos; Chloride, 56 mg/l; and Boron, 0.6 mg/l. (Id at 5 and E&B Exhibit C)

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1 On April 3, 2015, Board staff issued a Notice of a Tentative Cleanup and
2 Abatement Order to E&B Natural Resources for its operations on the Gov't Lease to perform
3 extensive groundwater and hydrogeologic investigations. (Regional Board file)

4 On April 14, 2015, E&B Natural Resources sampled its onsite well water and
5 attempted to collect a water sample from Sump #1 as defined in the Board's December 2014
6 inspection report. Since there was no water in the sump, E&B provided a water well sample to
7 Zalco Laboratories for analysis pursuant to Table 1 of the Tentative CAO. Zalco provided a
8 partial listing of constituents with the remainder to be provided by a contract laboratory. (Finch
9 Decl. at 14 and E&B Exhibit N)

10 On April 24, 2015, E&B Natural Resources examined the water well records at the
11 Kern County Water Agency (KCWA) to determine the number and locations of wells adjacent to
12 the Gov't lease. Three wells including E& B Natural Resources supply well were identified within
13 1 mile radius of the Gov't lease. A well driller's report indicates that Gov't supply well is 976 feet
14 in depth. (Id at 13 and 15 and E&B Exhibits M&O)

15 E&B Natural Resources retained Geosyntec Consultants to evaluate the Gov't lease
16 history, site hydrogeology, production water quality, and assess potential impacts to groundwater
17 quality from past operations to determine if the hydrogeologic characterization and monitoring as
18 required in the Tentative CAO was appropriate. (Id at 16 and E&B Exhibit P)

19 **III.**
20 **LEGAL BACKGROUND**

21 The Water Code in Section 13267 (b) (1) provides the authority for the Board to
22 require a person to furnish technical or monitoring program reports. Section 13267 (b) (1) states:

23 *"(b) (1) In conducting an investigation specified in subdivision (a), the regional board may*
24 *require that any person who has discharged, discharges, or is suspected of having*
25 *discharged or discharging, or who proposes to discharge waste within its region, or any*
26 *citizen or domiciliary, or political agency or entity of this state who has discharged,*
27 *discharges, or is suspected of having discharged or discharging, or who proposes to*
28 *discharge, waste outside of its region that could affect the quality of waters 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

1 that supports requiring that person to provide the reports." (Emphasis Added)

2 **IV.**
3 **LEGAL ANALYSIS**

4 **A. Evidence Available in Board Files and Analysis Conducted by E&B Natural**
5 **Resources Does Not Support Issuance of a CWC 13267 Order.**

6 **1. Tentative CAO Evidence and Explanation for Reporting.**

7 The findings as indicated in the CAO and listed below are the basis of requiring an
8 investigatory report and monitoring.

9 *11. On 25 March 2105, the Central Valley Water Board issued a Notice of Violation*
10 *(NOV) to the Discharger that was a result of an inspection report conducted on 11*
11 *December 2014 (See attachment C) which is attached here to and made a part of this*
12 *Order). The NOV alleged that the discharge was in violation of Section 13260 of the*
13 *California Water Code for failure to submit a Report of Waste Discharge before*
14 *discharging wastewater that could affect the quality of waters of the State. The quality of*
15 *the wastewater is unknown as a sample could not be collected during the inspection due to*
16 *a layer of oil on top of the wastewater in the ponds. (Emphasis Added)*

17 *13. Oil field production water can contain elevated concentrations of general minerals*
18 *(especially total dissolved solids and chloride, metals (i.e. arsenic), trace elements (i.e.*
19 *boron, strontium, thallium, lithium, etc.), petroleum hydrocarbons,, polynuclear aromatics*
20 *hydrocarbons (PAHs), volatile organic compounds (VOCs, i.e., benzene toluene,*
21 *ethylbenzene and xylenes (BTEX), and radionuclides. The unauthorized discharge of oil*
22 *field waste constituents to ground and/or groundwater creates to create a condition of*
23 *pollution in groundwater and may result in the degradation of water quality.*

24 *14. Land west of the Gov't Lease is being used for agricultural production, primarily*
25 *grapes and citrus crops. The nearest irrigated crops are approximately three miles west of*
26 *the lease. Many of the crops are irrigated with groundwater from local supply wells.*
27 *Based on the Ayers and Westcott (1985), irrigation water with a chloride concentration*
28 *above 350 mg/l can cause severe crop problems. Boron toxicity can occur on sensitive*
crops at concentrations less than 1 mg/l in irrigation water.

15. Underlying groundwater maybe degraded if mixed with oil field wastewater. Oil field
constituents could impair the groundwater for municipal and domestic supply and
agricultural supply uses.

16. An investigation is necessary to determine whether the discharge of wastewater has
caused of threatens to cause a threat of condition of pollution of nuisance to groundwater.

2. Evidence Contained within Board Files

a. Gov't Lease Permitting History

The Gov't lease was permitted for discharge to an ephemeral stream from at least
January 1979 through August 1996. All of these permits are for surface water discharges; sumps

1 were included as a part of the oil recovery process but were not a disposal method.¹

2 As an example of this history, Order No. 94-213, NPDES Permit No. CA. 0078336
3 issued to NAFTEX HOLDINGS, LTD. describes the produced water quality, treatment processes
4 and effluent limitations.² Key elements of the Order as follows:

- 5 • Finding 3 describes wastewater flowing to sumps in series and notes that the sumps
6 are described by discharger to be lined.
- 7 • Finding 5 describes the produced water with constituents as follows: Electrical
8 Conductivity, 440 micromhos, Chloride 54 mg/l, and Boron 0.13 mg/l.
- 9 • Finding 16 states that the discharge is consistent with antidegradation provisions of
10 Federal Law and State Board Resolution 68-16.
- 11 • B. Effluent Specifications implement the provisions of the Tulare Lake Basin Plan
12 for discharges of oil field production water.

13 **b. Gov't Lease Production Water Quality**

14 Monitoring data submitted to the Board by Rainbow Oil Company, Elf Aquitaine
15 Oil and Gas, Inc. and Bellaire Oil Company pursuant to their NPDES permits to the Regional
16 Board demonstrated that the produced waster complied with the salinity and oil and grease
17 limits.³

18 Evaluation of the data by GeoSyntec Consultants and as summarized in Table 1,
19 concluded the "overall general mineral quality of the wastewater produced in the Poso Creek Oil
20 Field is good."⁴

21 **3. Additional Investigations and Analysis Performed by E&B Natural
22 Resources.**

23 **a. Verification of Historical Waste Water Quality**

24 On March 23, 2015, E&B Natural Resources collected a production water sample
25 to verify its historical quality. The laboratory results were reported as EC of 500 micro mhos per
26

27 ¹ Exhibit G&H

28 ² Exhibit H

³ Exhibit J

⁴ Exhibit P

1 centimeter, Chloride, 56 mg/l and Boron, 0.6 mg/l.⁵ As reported by GeoSyntec: "These reported
2 concentrations meet Basin Plan objectives. The relatively good general mineral quality of the
3 produced water is thought to be the result of the proximity of the Sierra Nevada and the historical
4 flushing of connate bearing water in the oil bearing formations by fresh ground water from the
5 mountain recharge areas".⁶

6 **b. Water well Survey**

7 A water well survey was conducted by E&B Natural Resources that included a well
8 records search at the Kern County Water Agency.⁷ One of those wells (Well #1) is a E&B Natural
9 Resources supply source⁸. Geosyntec's evaluation of this survey is as follows:

10 *"Results of the survey indicate that there are 3 water wells located within approximately 1*
11 *mile of the center of the Government Lease. ...Based on their general locations and aerial*
12 *photograph reconnaissance it appears the wells are used for either oil field or cattle*
13 *ranching operations.*

14 *"The driller's log shows the well to be 976 feet deep and the top of the perforated interval*
15 *to be at a depth of 575 feet. The drillers log shows the subsurface lithology to be generally*
16 *interbedded clays and sands with some layers of gravel. The log shows that there is a*
17 *substantial amount of clay material in the formation including within the upper 500 feet of*
18 *the subsurface. No water level data are presented in the driller's log. Well #2 appears to*
19 *be used for cattle ranching operations, based on aerial reconnaissance. E&B reports that*
20 *Well #3 is owned by Linn Energy and is used for oil field operations. E&B reported that*
21 *additional well (Well #4) is located approximately 2 ½ miles southwest of the Government*
22 *Lease.*

23 *E&B performed a density/neutron log study for a mud waiver evaluation (Ellison, 2014)*
24 *that showed groundwater levels at depths ranging from 435 feet 620 feet below ground*
25 *surface in the Poso Creek Field (Ellison, 2014). Specifically, groundwater levels in Well*
26 *#1 located near the ponds (or well 27S/27E-14) was estimated at a depth of 508 feet below*
27 *ground surface. Based on the westward regional groundwater gradient, it is assumed that*
28 *Well #1 is located downgradient of Ponds 1 and 2.*

29 **c. Groundwater Quality Investigations**

30 E&B Natural Resources collected samples from its supply well in 2014 and 2015.

31 ⁵ Exhibit C

32 ⁶ Exhibit P at page 6

33 ⁷ Exhibit O

34 ⁸ Exhibit M, drillers log

35 ⁹ Exhibit P at pages 5&6.

1 As reported by Geosyntec Consultants:

2 *"Laboratory analyses for the sample collected on May 6, 2014 included general minerals*
3 *with boron. The specific conductance and TDS of the water were measured at 290*
4 *µmhos/cm and 170 mg/l, respectively. Boron was not detected (<0.1 mg/l) and a chloride*
5 *concentration of 24 mg/l was reported. The relatively low specific conductance*
6 *measurement, and low boron and chloride concentrations indicates that groundwater in*
7 *the well has not been significantly impacted by the potential downward migration of*
8 *wastewater.*

9 *A second sample was collected from the well on April 14, 2015. The sample was analyzed*
10 *for several analytical suites including general minerals, Total Recoverable Petroleum*
11 *Hydrocarbons by EPA Method 1664 (TRPH), Volatile Organic Compounds by EPA*
12 *Method 8260B (VOCs), Semi Volatile Organic Compounds by EPA Method 8270C*
13 *(SVOCs) and selected metals. Current available results and laboratory methodology*
14 *information are presented in E&B Exhibit N. The laboratory results are summarized as*
15 *follows:*

- 16 • *The specific conductance and TDS of the water were measured at 280 µmhos/cm and*
17 *190 mg/l, respectively. Boron was not detected (< 0.1 mg/L) and the chloride*
18 *concentration was reported at 21 mg/l.*
- 19 • *Total Recoverable Petroleum Hydrocarbons were reported as non-detect (< 5.0 mg/l)*
- 20 • *VOCs were not detected (< 5.0 micrograms per liter [µg/l]).*
- 21 • *SVOCs were not detected (< 10.0 µg/l).*
- 22 • *Selected metals including lithium, mercury and strontium were not detected.*

23 *The specific conductance/TDS and chloride concentrations of the water well water are*
24 *generally about ½ of that reported for the wastewater. In addition no TRPH (oil and*
25 *grease), VOCs, SVOCs or boron were detected in water samples collected from the well.*
26 *These laboratory results indicate that groundwater in the water well downgradient of*
27 *Ponds #1 and #2 has not been impacted by the downward migration."*

28 **4. Interpretation of All Evidence Including Documentation submitted to**
the Board and E&B Natural Resources Investigations.

GeoSyntec Consultants concluded based upon its review of the all of the available
evidence the following:

1. *"The three ponds on the Government Lease which are the focus of the tentative CAO*
2. *are not currently utilized in the site day to day wastewater treatment operations. E&B*
3. *is proposing to remove the ponds.*
4. *Groundwater levels beneath the ponds occur at a depth of approximately 500 feet.*
5. *The lithology between the base of the ponds and the top of groundwater includes*
6. *layers of clay based on a driller's log for a well located adjacent to the ponds (Well #1*
7. *located 475 feet west of Ponds 1 and 2). The log shows that there is a substantial*
8. *amount of clay material in the formation including within the upper 500 feet of the site*

1 subsurface. The occurrence of clay layers beneath the ponds has likely limited the
2 downward migration of water discharged at the site surface. The deep depth of
3 groundwater in the area and the occurrence of clay layers between the bottom of the
4 ponds and groundwater suggests that the potential for migration of contaminants is
5 extremely low.

- 6
- 7 3. Available laboratory data indicate that the quality of the wastewater generated during
8 historical oil field operations and during present day operations meets Basin Plan
9 Objectives and Effluent Limitations set by the RWQCB. The generally good quality of
10 the wastewater minimizes the potential for impacts to the environment, including
11 aquifers in the area.
- 12 4. There appears to be limited use of groundwater in the near vicinity of the Government
13 Lease and the ponds. The nearest agricultural fields are located approximately 3
14 miles from the impoundment ponds. In addition, based on a recent well survey
15 completed by E&B and known land uses in the near vicinity of the Poso Creek Oil
16 Field, there does not appear to be any wells used for domestic purposes within a one
17 mile radius of the ponds or the Government Lease. The well search indicates that
18 there are only three water wells located within approximately one mile of the
19 Government Lease including two wells used for oil field operations and one well
20 assumed to be used for cattle ranching.
- 21 5. The closest water well to the ponds (Well #1) is located 475 feet west of the large
22 impoundments (Ponds #1 and #2) and is used for oil field operations. The water well
23 is assumed to be located downgradient of the two ponds, based on regional
24 groundwater flow. Recent laboratory analyses of water samples collected from the
25 well indicate the groundwater is of good quality and contains relatively low
26 concentrations of specific conductance/TDS, chloride and boron (non-detect) relative
27 to past wastewater produced in the oil field. In addition the TPRH (oil and grease),
28 VOCs and SVOCs were not detected in the well. These results indicate that water in
Well #1 has not been impacted by oil field operations including the wastewater
treatment operations.

21 *The above information indicates groundwater beneath and downgradient of the ponds has
22 not been impacted due to past wastewater treatment operations at the site." (Emphasis
23 Added)*

23 *"Based upon Geosyntec's evaluation of currently existing information it is our opinion that
24 past operation of E&B Gov't lease has not impacted groundwater. The proposed
25 hydrogeologic investigation, based upon depth to groundwater and location in an oil
26 producing field, is not appropriate. Closure of the sumps as proposed by E&B pursuant to
27 a plan approved by the Board and BLM should be protective of the environment and
28 groundwater."¹⁰*

10 Exhibit P at Pages 7 & 8

1 **B. The Burden of the Reports including the Costs Does Not Bear a Reasonable**
2 **Relationship to the Need for the Report and the Benefits to be Obtained from the Reports.**

3 "Geosyntec estimates that the cost of any hydrogeological evaluation that includes
4 the installation of deep monitoring wells as suggested in the CAO would be very high. Geosyntec
5 estimates that costs of a hydrogeological evaluation that included the installation of three deep
6 monitoring wells and long-term monitoring would be in the range of \$750,000 to \$1,000,000."¹¹

7 As discussed previously, data contained within the Board files and analysis
8 preformed by E&B Resources has indicated that previous disposal of production water has not
9 impacted groundwater or beneficial uses. The projected costs of further investigation is
10 unwarranted and burdensome, in particular since the data is available and has been evaluated.

11 **V.**
12 **CONCLUSION**

13 E&B Natural Resources requests the Board not require the extensive investigations
14 pursuant to California Water Code Section 13267 as outlined in the proposed Cleanup and
15 Abatement Order (CAO) for its Gov't Lease in the Poso Creek Oil Field, Kern County.

16 Extensive monitoring and waste characterization for the Gov't Lease has been
17 submitted to the Board pursuant to waste discharge orders . As described above sufficient data and
18 analysis exists to demonstrate that past oil field production discharges have not impacted
19 groundwater or beneficial uses.

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27 ¹¹ Exhibit P at Page 8

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E&B Natural Resources request that if the Board issues a Cleanup and Abatement Order pursuant to Water Code Section 13304, the Order address solely the closure of the sumps by December 2015 pursuant to its letter contained in Exhibit F.

DATED: April 27, 2015

Respectfully submitted,

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