



**STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF CONSERVATION**

**CONSERVATION DOCKET NO: ENV-2020-L01
DIVISION OF ADMINISTRATIVE LAW DOCKET NO: 2020-9442-DNR**

**IN THE MATTER OF:
HERO LANDS COMPANY, L.L.C.**

**VERSUS
CHEVRON U.S.A. INC., ET AL.**

**DOCKET NO. 64-320, DIVISION "A"
25TH JUDICIAL COURT
PARISH OF PLAQUEMINES
(JUDGE KEVIN D. CONNER)**

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES, OFFICE OF
CONSERVATION MOST FEASIBLE PLAN AND WRITTEN REASONS IN
SUPPORT AS REQUIRED BY LA. R.S. 30:29**

Respectfully submitted on behalf of:

A handwritten signature in blue ink that reads "Richard P. Ieyoub, Sr." The signature is written in a cursive style and is positioned above the printed name.

**Louisiana Department of Natural
Resources, Office of Conservation
Richard P. Ieyoub, Sr.
Commissioner of Conservation**

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I. INTRODUCTION

In 2018, Hero Lands Company, L.L.C. (hereinafter “Hero Lands” or “Plaintiff”) filed suit in the 25th Judicial District Court against various oil companies and oil interest, including The California Company and/or Chevron U.S.A. Inc. (hereinafter “Chevron”), seeking damages and remediation of property owned by the plaintiff. Chevron admitted to environmental damage (Limited Admission) and this matter was referred to the Louisiana Department of Natural Resources Office of Conservation (“LDNR”, “Conservation,” “Agency”) for creation of the Most Feasible Plan as mandated by La. R.S. 30:29 (or “Act 312”).¹ The Limited Admission was filed July 29, 2020.²

In accordance with the Limited Admission, Chevron timely submitted its plan on September 9, 2020,³ for remediation and supplemental items.⁴ Hero Lands timely submitted its response on October 30, 2020.⁵ Office of Conservation submitted a request for Clarification on September 24,

¹ La. R.S. 30:29 was enacted by Act 312 of the 2006 Louisiana Legislature, effective June 8, 2006.

² Chevron Exhibit 52 C_LDNR 00052-00001 to C_LDNR 00052-00005. Chevron’s Limited Admission, July 29, 2020.

³ Chevron Exhibits 1-9: Exhibit 1 C_LDNR 00001-00001 to C_LDNR 00001-22858. Expert Report and Limited Admission Plan of David G. Angle, P.G., CGWP and Michael Pisani, P.E. including all Figures, Tables and Appendices, September 8, 2020. Exhibit 2 C_LDNR 00002-00001 to C_LDNR 00002-00167. Expert Report of Angela Levert, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 3 C_LDNR-00003-00001 to C_LDNR 00003-00015. Updated Tables of Angela Levert, November 3, 2020. Exhibit 4 C_LDNR 00004-00001 to C_LDNR 00004-00895. Exhibit 5 C_LDNR 00005-00001 to C_LDNR 00005-00084. Luther F. Holloway’s Expert Report and Vegetative Root Study, Hero Lands Company, LLC Property, including all Figures, Tables and Appendices, May 8, 2020. Exhibit 6 C_LDNR 00006-00001 to C_LDNR 00006-00317. Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 7 C_LDNR 00007-00001 to C_LDNR 00007-00064. Supplemental Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, October 27, 2020. Exhibit 8 C_LDNR 00008-00001 to C_LDNR 00008-01482. Expert Report of John R. Frazier, Ph.D., CHP including all Figures, Tables and Appendices, May 8, 2020. Exhibit 8 C_LDNR 00009-00001 to C_LDNR 00009-00358. Supplement Expert Report of John R. Frazier, Ph.D., CHP, including all Figures, Tables and Appendices, September 8, 2020.

⁴ Chevron Exhibit 12 C_LDNR 00012-00001. Letter from Claire E. Juneau, Kean Miller, to John Adams, Louisiana Office of Conservation, attaching Information and Supplement in Response to Inquiry Nos. 1 and 9. September 29, 2020.

⁵ Hero Lands Exhibit 6. Plaintiff’s Response to Chevron Limited Admission, including attachments, October 30, 2020.

2020.⁶ Chevron responded to this request on October 8, 2020.⁷ A Supplemental Response to Chevron Limited Admission was submitted by Hero Lands on December 4, 2020.⁸

Hero Lands submitted a Motion in Limine to Exclude, in part, Chevron's Limited Admission Plan.⁹ This Motion asserts that Hero Lands does not consent to the use of any exception to Statewide Order 29-B. This Motion and all supplemental material related will be addressed through separate instruments.¹⁰

The public hearing was held December 14, 2020, December 16-18, and December 21, 2020.¹¹ LDNR employees with relevant technical backgrounds sat as panel¹² and heard the testimony of 8 witnesses, seven (7) offered by Chevron and one (1) by Hero Lands.¹³ Post-Hearing Briefs and supplemental Post-Hearing Briefs were filed by both parties.¹⁴

After consideration of the evidence, LDNR has decided to partially approve the Chevron plan but is structuring a plan which it finds to be the most feasible plan ("LDNR Most Feasible Plan"). This LDNR Most Feasible Plan ("Plan" or "MFP") is a "feasible plan" within the meaning of La. R.S. 30:29 (C),¹⁵ and is being filed with the Court in accordance with La. R.S. 30:29(C)(2)&(4). The written reasons are incorporated in the Plan and issued in compliance with La. R.S. 30:29(C)(2) and LAC 43:XIX.627.A.¹⁶

⁶ Plaintiff's Exhibit 2. Office of Conservation Request for Clarification, September 24, 2020.

⁷ Chevron Exhibit 13 C_LDNR 00013-00001 to C_LDNR 00013-00055. Letter from Claire E. Juneau, Kean Miller, to John Adams, Louisiana Office of Conservation, providing Written Responses to Request for Clarification, including all tables, figures, and appendices.

⁸ Plaintiff Exhibit 5. Plaintiff's Supplemental Response to Chevron Limited Admission, including attachments, December 4, 2020.

⁹ Plaintiff Exhibit 4, Plaintiff's Motion in Limine (DNR Filing), including attachments, December 4, 2020.

¹⁰ See Exhibit A, page 27, Reasons of Commissioner in Support of Administrative Law Judge Order Denying Plaintiff's Motion in Limine.

¹¹ Note that the in-person December 14, 2020, hearing date was limited to half of a day due to COVID-19 protocols. The hearing resumed December 16, 2020 at 13:00 CST via Zoom Conference Call.

¹² See Exhibit B, page 37. Panelists and Their Backgrounds.

¹³ See Exhibit C, page 39. Witnesses Who Testified

¹⁴ Chevron U.S.A. Inc.'s Post-Hearing Brief in Support of Feasible Plan and Hero Lands Company Post-Hearing Objection to Chevron's Limited Admission Plan, submitted December 30, 2020. Chevron U.S.A. Inc.'s Supplemental Post-Hearing Brief in Support of Feasible Plan and Hero Lands Post-Hearing Objection to Chevron's Limited Admission Plan (Supplement), submitted January 27, 2021.

¹⁵ If at any time during the proceeding a party admits liability for environmental damage pursuant to R.S. 30:29, that party may elect to limit this admission of liability for environmental damage to responsibility for implementing the most feasible plan to evaluate, and if necessary, remediate all or a portion of the contamination that is the subject of the litigation to applicable regulatory standards.

¹⁶ Within 60 days of the conclusion of the hearing, or within such longer time as the court allows, the Commissioner of Conservation shall either approve a submitted plan as the most feasible plan or structure a plan which, based on the evidence submitted on the record, the Commissioner determines to be the most feasible plan and shall further issue written reasons for the plan he approves or structures.

II. OVERVIEW

A. General

The Hero Lands Property at issue is approximately 155 acres and is located in Plaquemines Parish, Louisiana consisting of tracts of land to the east (NE and SE Tracts) and west (NW and SW Tracts) Louisiana Highway 23 (Belle Chasse Highway).¹⁷ It consists of portions of Sections 15, 16, and 18 of Township 14S, Range 24E and portions of Sections 2, and 3, Township 15S, Range 24E. This Limited Admission was limited to three (3) tracts on the Hero Lands Property.¹⁸ The property is bordered on the east by the Mississippi River. The Belle Chasse Highway bisects the property, north to south. The western boundary of the property is a ditch that was used in the past as saltwater discharge to Bayou Barriere. This ditch runs north to south along the boundary between the Hero Lands Property (SW tract) and the Naval Air Reserve. The southern boundary of the SE tract is adjacent to the Chevron Oronite Plant (AI 1708).¹⁹ Between the NW and SW Tracts is a residential neighborhood not owned by Hero Lands.

The Hero Lands Property is situated in the Stella Field and has an elevation that is below to slightly above mean sea level. There are 45 wells listed on the property in the Hero Lands' petition. The property was first developed in 1940. Twelve (12) wells were drilled by the California Company and/or Chevron. Chevron ceased active operation on the property in 1971. Nearby property uses are residential, heavy industrial and industrial. Currently, the Hero Land properties are classified as heavy and light industrial.²⁰

The area around sampling location BC-8 and the NW Tract of this property will be subject to Office of Conservation orders and regulations. The limited admission includes the NE, SE and SW Tracts only. Testimony and exhibits were introduced indicating that there have been historical releases on the property as well as concerns with the former

¹⁷ Chevron Exhibit 1 C_LDNR 00001-0068. Figure 2, USGS Topographic Map & Public Lands Survey Sections with property outlined.

¹⁸ Chevron Exhibit 5 C_LDNR 00052-00005. Exhibit A of Chevron's Limited Admission, July 29, 2020.

¹⁹ Louisiana Department of Environmental Quality (LDEQ) Electronic Document Management System (EDMS), Agency Interest Number (AI). EDMS is the electronic repository for all of LDEQ's records, the AI number is the unique identifier for sites.

²⁰ Chevron Exhibit 1 C_LDNR 00001-00010. Expert Report of David G. Angle, P.G., CGWP & Michael E. Pisani, P.E. and Limited Admission Plan, September 8, 2020.

saltwater disposal ditch (ditch), that was used from 1940 to 1984.²¹ The ditch which runs through the property was not fully addressed by Chevron in their plan or previous sampling.²²

Remediation in the plan presented by Chevron²³ was focused on several locations, some of which were outside of the Limited Admission. Only locations included in the Chevron Limited Admission, dated July 29, 2020, will be referred to in this Most Feasible Plan.²⁴

1. NE TRACT

In the NE Tract, Chevron installed/formerly owned wells are located in the southern portion of this tract.²⁵ This area was developed between 1936 and 1951 as evidenced by historical aerial photography.²⁶ A pit and a tank battery appear beginning in the 1972 aerial in the southern region of the NE Tract. This pit is present in the 1982 historical aerial photography but does not appear to be present in the 1985 historical aerial photography. The tank battery is still present on this tract at the time of the hearing. Saltwater injection disposal wells (SWDs) were installed/converted in 1984, 1987, and 1989 in the southern portion of the NE Tract.

²¹ Hero Lands Exhibit 6. Plaintiff's Response to Limited Admission, October 30, 2020.

²² Chevron Exhibit 61 C_LDNR 00061-00001. Historical Spill Location. Chevron Exhibit 62 C_LDNR 00062-00001. Historical Spill Locations & Remediation Areas

²³ Chevron Exhibits 1-9: Exhibit 1 C_LDNR 00001-00001 to C_LDNR 00001-22858. Expert Report and Limited Admission Plan of David G. Angle, P.G., CGWP and Michael Pisani, P.E. including all Figures, Tables and Appendices, September 8, 2020. Exhibit 2 C_LDNR 00002-00001 to C_LDNR 00002-00167. Expert Report of Angela Levert, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 3 C_LDNR-00003-00001 to C_LDNR 00003-00015. Updated Tables of Angela Levert, November 3, 2020. Exhibit 4 C_LDNR 00004-00001 to C_LDNR 00004-00895. Exhibit 5 C_LDNR 00005-00001 to C_LDNR 00005-00084. Luther F. Holloway's Expert Report and Vegetative Root Study, Hero Lands Company, LLC Property, including all Figures, Tables and Appendices, May 8, 2020. Exhibit 6 C_LDNR 00006-00001 to C_LDNR 00006-00317. Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 7 C_LDNR 00007-00001 to C_LDNR 00007-00064. Supplemental Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, October 27, 2020. Exhibit 8 C_LDNR 00008-00001 to C_LDNR 00008-01482. Expert Report of John R. Frazier, Ph.D., CHP including all Figures, Tables and Appendices, May 8, 2020. Exhibit 8 C_LDNR 00009-00001 to C_LDNR 00009-00358. Supplement Expert Report of John R. Frazier, Ph.D., CHP, including all Figures, Tables and Appendices, September 8, 2020.

²⁴ Chevron Exhibit 5 C_LDNR 00052-00005. Exhibit A of Chevron's Limited Admission, July 29, 2020.

²⁵ Chevron Exhibit 1 C_LDNR 00001-00081. Figure 15, LDNR Registered Oil & Gas Wells and Pit Locations.

²⁶ Chevron Exhibit 1 C_LDNR 00001-00083 to C_LDNR 00001-00084. Figure 17, 1936 Aerial and Figure 18, 1951 Aerial.

2. SE TRACT

Portions of the SE Tract consists currently of active Oil and Gas (O&G) Operations and appears to occasionally be used as a laydown yard and overflow parking lot.²⁷ O&G production is not relegated to one area of this tract, but is distributed throughout. Chevron operated wells are SN 27622, 83094, and 214584.

3. SW TRACT

The SW Tract of the area is heavily vegetated in portions. There are active O&G operations on site, and in the SW corner there is a storm water impoundment associated with the Chevron Oronite plant. The tract is lined to the north and west by the former saltwater disposal ditch and the Naval Air Station fencing. This area had several pits and O&G wells throughout the tract.²⁸ Some pits have remaining levees that will need to be addressed in compliance with pit closure requirements.²⁹

4. GROUNDWATER

There are two (2) shallow groundwater zones on the property, zone A and zone B. Zone A is a silty clay to clayey silt zone found from 7 to 15 ft below ground surface (bgs). There is evidence of a direct connection between zone A and the Mississippi River. Zone B is a sandy silt to sand zone found from 20 to 35 ft below ground surface. Both zones generally flow towards the west due to the influence of the hydraulic head of the Mississippi River. Underlying the two shallow groundwater zones are zone C and the Gonzales aquifer. Based on the available data from the USGS and nearby water wells, the Gonzales aquifer is typically brackish to salty under Plaquemines Parish.³⁰ The drinking water for the area is supplied by the local water district which is sourced from the Mississippi River. The A and B groundwater zones are classified by RECAP standards as Groundwater Class 3 due to poor quality.³¹

²⁷ Chevron Exhibit 1 C_LDNR 00001-00096 to C_LDNR 00001-00108. Figure 96 through 42, Historical Aerials.

²⁸ Chevron Exhibit 1 C_LDNR 00001-00081. Figure 15, LDNR Registered Oil & Gas Wells and Pit Locations.

²⁹ LAC 43 XIX. 311 Pit Closure.

³⁰ USGS Water Resources of Plaquemines Parish, Louisiana, Fact Sheet 2013-3031, June 2013.

³¹ C_LDNR 00001-10329 "The quality of the shallow ground water near the plant area is believed to be poor. Water wells that tap the shallow deposits generally exhibit relatively high concentrations of total dissolved solids, chlorides, and iron., Pg. 31 7/7/85 Solid Waste Permit Application." and C_LDNR 00001-10185 to C_LDNR

III. PROPOSED PLANS

A. GENERAL

No plan was received by Conservation from Hero Lands. Comments from Hero Lands will be introduced as necessary within the following overview of Chevron's Plan and where necessary. In addition, Conservation received post-hearing briefs and responses will be incorporated into the comments of this plan where needed.³² Chevron submitted a plan requesting exceptions as well as a "hypothetical" 29-B plan.³³ Chevron also proposed to use RECAP delineation to industrial concentrations. As discussed in this MFP Section IV.A. Conservation has determined that non-industrial standards are most feasible for this site.

1. CHEVRON'S SOIL PLAN

Generally, the information provided to Conservation established that soil in, around and below the former exploration and pit locations at the Hero Lands Property exceeds salt parameters at many locations and at least 8 ft bgs. The plan submitted by Chevron, included soil remediation to meet applicable salt parameters approximately 2 ft bgs with soils below to remain as is. Such conditions require compliance with the Exceptions provisions of LAC 43:XIX.319³⁴ to address compliance with LAC 43:XIX.313³⁵ for soil conditions 3 ft bgs and below. Therefore, the Chevron plan was found not in compliance with the Exception provisions of LAC 43:XIX.319. Based on all applicable information provided to the Agency concerning the Hero Lands public hearing, it has been determined that conclusive, comprehensive, and/or sound and objective information/data, does not

00001-10327 "Poor water quality and low yield." Pg. 9, 2015-2016 RCRA Comprehensive Groundwater Monitoring Evaluation Report by LDEQ."

³² Chevron U.S.A. Inc.'s Post-Hearing Brief in Support of Feasibly Plan, dated, December 30, 2020, Post-Hearing Objection to Chevron's Limited Admission Plan, dated December 30, 2020 (submitted by Hero Lands) and Chevron U.S.A. Inc.'s Supplemental Post-Hearing Brief in Support of Feasible Plan, dated January 27, 2021.

³³ Chevron Exhibit I C_LDNR 00001-20895 to C_LDNR 00001-20919. Appendix O, Hypothetical 29-B Plan.

³⁴ LAC 43:XIX.319.A "The commissioner may grant an exception to any provision for this amendment upon proof of good cause. The operator must show proof that such an exception will not endanger USDWs."

³⁵ LAC 43:XIX.313 Pit Closure techniques and Onsite Disposal of E&P Waste.

exist to support that the above requirement with respect to Chevron's proposed soil remediation strategy.

Soil sample SS-17 exceeds electrical conductivity (EC) at 0-2 ft.³⁶ Soil samples BC-28 and SB-12 exceed Barium Recap Screening Standards at 0-2 ft.³⁷ This area will be treated from 0-2 ft for salt impacts. The saltwater discharge ditch will be excavated for 29-B metals and hydrocarbons.³⁸

The saltwater discharge ditch will be addressed in accordance with the Pit Closure Techniques and Onsite Disposal of Exploration & Production (E&P) Waste requirements detailed in LAC 43:XIX.313.B³⁹ Based on all applicable information provided to the Agency before, during and after the Hero Lands public hearing, it has been determined that conclusive, comprehensive, and/or sound and objective information or data, does not exist to support that the above requirement has been met with respect to Chevron's proposed soil remediation strategy. Soil treatment and excavation on site is not objected by the panel in the proposed areas; however, it may not be inclusive of all areas or depths requiring excavation. The proposed cost to implement the Chevron plan is \$855,840.⁴⁰

2. CHEVRON'S GROUNDWATER PLAN

Chevron's groundwater plan relies heavily on the use of RECAP and dilution attenuation factors (DAF). Chevron proposes no monitoring for the zone A and monitoring quarterly for 3 years if "required" by Conservation for the zone B with no remediation for either zone. Chevron's plan notes a plaintiff plan (created by Icon) that Conservation has not reviewed and therefore, the panel cannot comment regarding the details of this plan. Chevron's plan states that the Icon plan suggests that a potential use of the 2 northern tracts could be for cattle, and proposes to either install a four (4) inch water well into the Gonzales aquifer

³⁶ Chevron Exhibit 1 C_LDNR 00001-00192 to C_LDNR 00001-00202. Table 6, Plaintiff's Soil Analytica Results Summary, and C_LDNR_00205 to C_LDNR 00001-00225 Table 9, Defendant's Soil Analytical Results Summary.

³⁷ Chevron Exhibit 60 C_LDNR 00060-00003. Exceedance Figure Slides.

³⁸ Chevron Exhibit 62 C_LDNR 00062-00001. Historic Spill Locations & Remediation Areas.

³⁹ LAC 43:XIX.313.B states "Prior to conducting onsite pit closure activities, an operator must make a determination that the requirements of this Subparagraph are attainable."

⁴⁰ Chevron Exhibit 1, C_LDNR 00001-00034

and operate for 30 years or to provide the cost to supply water from the Belle Chasse Public Supply for 30 years. The cost to drill and operate a groundwater well for 30 years would be approximately \$41,000. The cost to use the Belle Chasse Public Supply Alternative to supply water for the cattle would be \$133,000.⁴¹ Hero Lands objects to the Chevron groundwater plan.⁴² The cost to implement the groundwater plan as proposed by Chevron is \$141,000.⁴³

IV. LDNR MOST FEASIBLE PLAN

A. SOIL

Conservation will be partially accepting the Chevron Plan. There is no objection to the proposed remediation and treatment of the areas proposed by Chevron. However, some these areas are not fully delineated and require more information to determine the full extent of potential contamination. Conservation will be requiring further delineation of specified areas, review of former pit areas, and the assessment of the drainage ditch present on the property.⁴⁴

When the Panel asked Mr. George Hero regarding current and future land use intentions, he responded “We (Hero Lands) do not decide the land use of our property. Investors and developers and owners come to us...”⁴⁵ For this reason, Conservation cannot accept that future land use will strictly be industrial. Conservation therefore must take the most conservative standard of non-industrial.⁴⁶

Hero Lands identified former pits that were not tested.⁴⁷ When questioned, Chevron provided a figure showing the placement of sampling locations and former pits.⁴⁸

⁴¹ Chevron Exhibit 1 C_LDNR 00001-00035. Expert Report of David G. Angle, P.G., CGWP & Michael E. Pisani, P.E. and Limited Admission Plan, September 8, 2020, page 27.

⁴² Plaintiff’s Exhibit 6. Plaintiff’s Response to Chevron Limited Admission, including attachments, October 30, 2020.

⁴³ Chevron Exhibit 1 C_LDNR 00001-00034. Expert Report of David G. Angle, P.G., CGWP & Michael E. Pisani, P.E. and Limited Admission Plan, September 8, 2020, page 6.

⁴⁴ Plaintiff’s Exhibit 6. Plaintiff’s Response to Chevron Limited Admission, including attachments, October 30, 2020.

⁴⁵ Hearing Transcript, December 21, 2021, page 258 through 260, lines 25 through 13.

⁴⁶ RECAP defines non-industrial as “any property that does not meet the exclusive definition of industrial property (see Appendix E). Such properties may be residential, farming (livestock or vegetative), or undeveloped lands that are not included in the industrial property description (privately-owned lands, wetlands, state, and national parks). Non-industrial sites shall be managed through comparison with non-industrial standards and/or remediated to non-industrial standards.

⁴⁷ Plaintiff’s Exhibit 5. Supplemental Response to Chevron Limited Admission Plan, September 8, 2020, dated December 4, 2020, page 3.

⁴⁸ Chevron Exhibit 60 C_LDNR 00060-0001 to C_LDNR 0008. Exceedance Figure Slides.

The Agency has deemed it necessary for Chevron to perform soil sampling in the four pits located in the SE Tract and the three pits in the SW Tract that were not previously sampled. The additional samples shall be representative of each pit feature with a minimum of one sample in each corner and one sample in the center of the pits. Furthermore, all pit-like features are to be identified and all pits are to be registered for closure.⁴⁹ Representative soil samples are to be collected and analyzed in accordance with 29-B parameters as found in LAC 43:XIX.Chapter 3 at a minimum of 250 feet apart on both sides of the saltwater discharge ditch. Samples are to be no less than 3 ft in depth below the established base of the ditch and no more than five (5) ft from the ditch edge.

This MFP was developed using information provided by both parties. Data provided in Chevron's MFP unless otherwise specified.⁵⁰ Appropriate testing methods should be used depending on what constituent is out of compliance and which regulation provides guidance (i.e. Barium will use RECAP testing methods and True Total Barium (TTB) will use 29-B). Associated documents were used in the creation of this plan.⁵¹ A

⁴⁹ See Figure 1, page 19. The figure only includes features that were brought to the attention of the panel. Any future identified areas that may require remediation are not depicted on this figure, but are required to be addressed by Chevron.

⁵⁰ Chevron Exhibits 1-9: Exhibit 1 C_LDNR 00001-00001 to C_LDNR 00001-22858. Expert Report and Limited Admission Plan of David G. Angle, P.G., CGWP and Michael Pisani, P.E. including all Figures, Tables and Appendices, September 8, 2020. Exhibit 2 C_LDNR 00002-00001 to C_LDNR 00002-00167. Expert Report of Angela Levert, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 3 C_LDNR-00003-00001 to C_LDNR 00003-00015. Updated Tables of Angela Levert, November 3, 2020. Exhibit 4 C_LDNR 00004-00001 to C_LDNR 00004-00895. Exhibit 5 C_LDNR 00005-00001 to C_LDNR 00005-00084. Luther F. Holloway's Expert Report and Vegetative Root Study, Hero Lands Company, LLC Property, including all Figures, Tables and Appendices, May 8, 2020. Exhibit 6 C_LDNR 00006-00001 to C_LDNR 00006-00317. Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 7 C_LDNR 00007-00001 to C_LDNR 00007-00064. Supplemental Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, October 27, 2020. Exhibit 8 C_LDNR 00008-00001 to C_LDNR 00008-01482. Expert Report of John R. Frazier, Ph.D., CHP including all Figures, Tables and Appendices, May 8, 2020. Exhibit 8 C_LDNR 00009-00001 to C_LDNR 00009-00358. Supplement Expert Report of John R. Frazier, Ph.D., CHP, including all Figures, Tables and Appendices, September 8, 2020.

⁵¹ Chevron Exhibits 1-9: Exhibit 1 C_LDNR 00001-00001 to C_LDNR 00001-22858. Expert Report and Limited Admission Plan of David G. Angle, P.G., CGWP and Michael Pisani, P.E. including all Figures, Tables and Appendices, September 8, 2020. Exhibit 2 C_LDNR 00002-00001 to C_LDNR 00002-00167. Expert Report of Angela Levert, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 3 C_LDNR-00003-00001 to C_LDNR 00003-00015. Updated Tables of Angela Levert, November 3, 2020. Exhibit 4 C_LDNR 00004-00001 to C_LDNR 00004-00895. Exhibit 5 C_LDNR 00005-00001 to C_LDNR 00005-00084. Luther F. Holloway's Expert Report and Vegetative Root Study, Hero Lands Company, LLC Property, including all Figures, Tables and Appendices, May 8, 2020. Exhibit 6 C_LDNR 00006-00001 to C_LDNR 00006-00317. Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 7 C_LDNR 00007-00001 to C_LDNR 00007-00064. Supplemental Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, October 27, 2020. Exhibit 8 C_LDNR 00008-00001 to C_LDNR 00008-01482. Expert Report of John R. Frazier, Ph.D., CHP including all Figures, Tables and Appendices, May 8,

plan should be submitted to the agency to address the requirements of the MFP prior to implementation. This plan should use RECAP non-industrial standards to achieve delineation and compliance of the soils.

1. NE TRACT

Soil sample locations SB-3 (EC, ESP, and SAR) and BC-5 (EC, ESP, and SAR) were not vertically delineated for salt parameters nor was SPLP provided. Additionally, SS-8 was not vertically delineated for salt parameters. Hero Lands stated that SB-104 was not sampled from 0-2 feet.⁵² Their expert testimony verifies the same. Further, that this area is being treated for salt impacts at 0-2 feet. Since treatment for salt impacts and confirmatory sampling will be implemented in this area, it is not required to sample SB-104 in the 0-2 feet depth range.

In regards to the metals, total petroleum hydrocarbons (TPH) fractions and O&G, soil sample location BC-6 from 0-4 ft and SB-3 from 0-2 ft exceeds the barium RECAP SS but are below 29-B standards. The plan requires SPLP and should be provided by Chevron for these locations. Barium should be delineated to non-industrial standards.

Chevron proposes to treat 137,650 square feet of soil in this area due to salt exceedances. Treatment will consist of surface amendments and mixing and blending of soils.⁵³ Monitoring will continue for 128 days and is weather dependent.⁵⁴

2. SE TRACT

The following soil sample locations should be vertically delineated for salt parameters: SB-4 (ESP and SAR), SB-5 (EC, ESP, and SAR), SB-10 (EC, ESP, and SAR), SB-12 (EC, ESP and SAR), SS-13 (EC, ESP, and SAR), SS-17 (EC, ESP, and SAR) and BC-28 (EC, ESP, and SAR). SPLP is needed for sample SB-4. ESP, EC, and SAR salt exceedances are found in sample BC-28 at 8-10 ft, but no samples were taken from 10-20 ft; thus, the area at BC-28 is not fully delineated. Sample point BC-16 (EC, ESP, and SAR) has salt exceedances at all depths and

2020. Exhibit 8 C_LDNR 00009-00001 to C_LDNR 00009-00358. Supplement Expert Report of John R. Frazier, Ph.D., CHP, including all Figures, Tables and Appendices, September 8, 2020.

⁵² Report of the public hearing held by the Office of Conservation, State of Louisiana, on December 17, 2020, via Zoom in Baton Rouge, Louisiana, page 32 line 7 through page 33 line 3.

⁵³ Chevron Exhibit 1 C_LDNR 00001-00034. Chevron Exhibit 1 C_LDNR 00001-00034. Expert Report of David G. Angle, P.G., CGWP & Michael E. Pisani, P.E. and Limited Admission Plan, September 8, 2020, page 6.

⁵⁴ Report of the public hearing held by the Office of Conservation, State of Louisiana, on December 17, 2020, via Zoom in Baton Rouge, Louisiana, page 157 lines 16-20.

should be fully delineated. SB-113 (EC, ESP, and SAR) should be fully delineated, and SPLP shall be provided for this location. SS-11 (ESP and SAR), SS-12 (EC, ESP and SAR) and SS-13 (EC, ESP, and SAR) has exceedances at all depths therefore SPLP shall be provided for these locations. Sample points SS-15 (EC, ESP, and SAR) and SS-17 (EC, ESP, and SAR) have exceedances at all depths. Increases in constituents of concern concentrations as depth increases, along with therefore SPLP, should be provided. Hero Lands stated that BC-14 and BC-15 were not sampled from 0-2 ft.⁵⁵ Chevron confirmed that this statement is correct, but the area will be included in soil remediation from 0-2 ft. Treatment for salt impacts and confirmatory sampling will be implemented in this area; therefore, it is not required to sample BC -14 and BC -15 in the 0-2ft depth range. Treatment of this area is confirmed according to the Michael Pisani expert presentation.⁵⁶

The metals, TPH fractions and O&G found in the pit associated with soil sample SB-4 will be excavated to two (2) ft.⁵⁷ Aliphatic (Ali) and aromatic (Aro) exceedances were found at this location below two (2) ft. Therefore, soil sample location SB-4 should be vertically delineated for non-industrial TPH fractions to determine the appropriate excavation depth. Additionally, Michael Pisani describes that the pit associated with soil sample location BC-16 will be excavated once the vertical delineation to non-industrial RECAP concentrations is completed. The pit associated with samples BC-16R (O&G, Ali C12-C16, and Aro C21-C35), BC-16 (Ba), SB-5R (Ba and Aro C21-C35), and SB-5 (TTB & Ba) has 29-B and Recap Screening Standard exceedances from 0-8 ft. The tank battery area associated with soil sample location SS-17 will be excavated for 29-B metals and hydrocarbons.⁵⁸

Clean overburden that will be left on site is required to be tested for compliance with 29-B parameters prior to use. The Chevron plan details that soils excavated will be taken to the Colonial Landfill in Sorrento, LA.⁵⁹ Conservation records do not identify Colonial Landfill as a facility that is permitted to accept the specific E&P waste types that may be generated from remediation at this location. Therefore, Chevron must utilize additional sites which are permitted to receive the

⁵⁵ Report of the public hearing held by the Office of Conservation, State of Louisiana, on December 17, 2020, via Zoom in Baton Rouge, Louisiana, page 34, line 3 through 10.

⁵⁶ Chevron Exhibit 1 C_LDNR 00001-00062. Historical Spill and Remediation Areas.

⁵⁷ Chevron Exhibit 1 C_LDNR 00001-00172 to C_LDNR 00001-00173.

⁵⁸ Chevron Exhibit 62 C_LDNR 00062. Historical Spill Location & Remediation Areas.

⁵⁹ Chevron Exhibit 1 C_LDNR 00001-00033. Soil Removal and Replacement.

E&P waste or provide an alternate landfill, which can accept E&P waste types generated through remediation at the Hero Lands property.

During the panel's review of the plan and the areas of interest, a shed was identified as being located on a portion of the land that requires treatment. As such, the shed shall be removed. The shed consists of a concrete slab, metal walls and roof, and oil and gas debris.⁶⁰

3. SW TRACT

Soil sample locations SB-7 (SAR) and B-23 (SAR, EC, and ESP) exceeds salt parameters but no plans are presented for remediation. A plan must be provided to address the exceedances. The following soil sample locations should be vertically delineated for salt parameters: SB-6 (SAR), SB-7 (SAR), SB-11 (EC and SAR), SB-14 (SAR), BC-10 (SAR), BC-23 (SAR), BC-26 (ESP and SAR), BC-27 (SAR). SB-15 was not horizontally delineated. Chevron is to conduct supplementary soil samples vertically and horizontally for 29-B salt parameters to determine the extent of impact. Soil sample locations SB-6R and SB-6R3 have Aliphatic and Aromatic exceedances from 4-6 ft. This exceedance is only in the 2-4 ft, range. Chevron is to vertically delineate fractions below 4-6 ft.⁶¹ Soil sample locations SB-7 (O&G), SB-7R (Aro C21-C35), SB-8 (Ali C12-C16, and Aro C21-C35), BC-11R (Aro C21-C35), BC-11 (Ba, Ali C12-C16, and Aro C21-C35), and BC-9 (Ba), and SB-15 (Ba) exceed soil metals, TPH fractions, and O&G; however, no plans are presented for remediation. Soil sample location SB-13 exceeds 29-B limitations for Arsenic and the RECAP SS for barium. Arsenic and barium are not vertically delineated. Therefore, Chevron is to perform additional sampling to demonstrate vertical delineation for metals, TPH fractions and O&G. TPH fractions and barium should be delineated to RECAP non-industrial standards. Soil sample locations SB-13 and SB-14R should be vertically delineated for arsenic. Soil sample location SB-116 is not vertically delineated for true total barium. Vertical (including SPLP) and horizontal delineation should be provided for this sample.

⁶⁰ Exhibit D, page 41.

⁶¹ Chevron Exhibit 1 C_LDNR 00001-00171. Figure 105 Proposed 29-B Metals and Hydrocarbons Remediation Area. C_LDNR 00001-00172. Figure 106 Proposed 29-B Salt Remediation areas.

4. DIOXINS

Conservation consulted with LDEQ regarding the appropriate action levels for these parameters. It was determined that the only values out of compliance were at BC-8R and BC-16R. As previously mentioned, BC-8R is not included in this Limited Admission and will be addressed through other means. BC-16R, however, is part of this Limited Admission and is part of an area for removal. LDEQ recommends no additional action to address detected concentrations of dioxins/furans in soils.⁶²

B. GROUNDWATER

RECAP on page 60 states that “The GW_{3ndw} shall be based on the protection of a downgradient surface water body that is classified as a non-drinking water source.” At this time, it is not known if the A zone is connected to the ditch that traverses through the property. If the aquifer and the ditch are connected, the ditch will be the point of exposure and a dilution attenuation factor (DAF) will need to be established. This will need to be verified by measuring the ditch depth and comparing it to nearby borings. When asked during the hearing, neither party measured the depth of the ditch. “I’d suggest looking at the log that it (the drainage ditch) goes down several feet. [...] I don’t have a survey elevation for it.”⁶³ A definitive depth of the ditch was not provided. Conservation is requiring that locations along the path of the ditch on the limited admission property be measured and compared to the additional boring logs required by the soils section of this plan in order to account for the natural variability in the geology of the area.⁶⁴

This MFP was developed using documentation provided by both parties. Data provided in Chevron’s MFP and associated documents and comments were used in the creation of this plan.⁶⁵ A plan should be submitted to the agency to address the

⁶² See Exhibit E, page 42. LDEQ response regarding dioxins/furans in soils.

⁶³ Report of the public hearing held by the Office of Conservation, State of Louisiana, on December 17, 2020, via Zoom in Baton Rouge, Louisiana, page 90, line 21 through page 93 line 10.

⁶⁴ Plaintiff’s Exhibit 23. As previously addressed in a letter dated October 27, 2015, to Louis E. Buatt, page 3, noting that manmade surface water bodies are not exempt from regulations.

⁶⁵ Chevron Exhibits 1-9: Exhibit 1 C_LDNR 00001-00001 to C_LDNR 00001-22858. Expert Report and Limited Admission Plan of David G. Angle, P.G., CGWP and Michael Pisani, P.E. including all Figures, Tables and Appendices, September 8, 2020. Exhibit 2 C_LDNR 00002-00001 to C_LDNR 00002-00167. Expert Report of Angela Levert, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 3 C_LDNR-00003-00001 to C_LDNR 00003-00015. Updated Tables of Angela Levert, November 3, 2020. Exhibit 4 C_LDNR 00004-

requirements of the MFP prior to implementation. Submittals to the agency should use non-industrial RECAP standards for delineation of the site.

The NW Tract and Area around BC-8 are not included in this Limited Admission. Therefore, these Tracts will not be addressed in this MFP. Conservation will address these areas separately as part of our standard regulatory procedures.

1. BACKGROUND MONITORING WELLS

The available data from background wells has only a few data points established. Background wells in the A zone should be monitored quarterly for metals and NORM for one consecutive year (quarterly) to verify the background concentrations for the surrounding areas are accurate.

2. A Zone

a. NE Tract

A monitoring well should be installed in the southwest corner of this tract to monitor the groundwater for chlorides, barium, NORM, and arsenic quarterly for a minimum of three (3) years following the soil treatment in the area.⁶⁶ Delineation of the groundwater will be established using the appropriate RECAP standards. Additional monitoring wells may be required.

b. SE Tract

Wells downgradient of the soil treatment/remediation areas should be monitored for TPH Fractions, chlorides, barium, NORM, and dissolved metals quarterly for a minimum of three (3) years after the remedial work is completed at the SE Tract. Wells downgradient include BC-15 and BC-

00001 to C_LDNR 00004-00895. Exhibit 5 C_LDNR 00005-00001 to C_LDNR 00005-00084. Luther F. Holloway's Expert Report and Vegetative Root Study, Hero Lands Company, LLC Property, including all Figures, Tables and Appendices, May 8, 2020. Exhibit 6 C_LDNR 00006-00001 to C_LDNR 00006-00317. Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, September 8, 2020. Exhibit 7 C_LDNR 00007-00001 to C_LDNR 00007-00064. Supplemental Expert Report of John Kind, Ph.D., CIH, CSP, including all Figures, Tables and Appendices, October 27, 2020. Exhibit 8 C_LDNR 00008-00001 to C_LDNR 00008-01482. Expert Report of John R. Frazier, Ph.D., CHP including all Figures, Tables and Appendices, May 8, 2020. Exhibit 8 C_LDNR 00009-00001 to C_LDNR 00009-00358. Supplement Expert Report of John R. Frazier, Ph.D., CHP, including all Figures, Tables and Appendices, September 8, 2020.

⁶⁶ See Figure 1, page 19.

16. At BC-16. The ERM sample for benzene was above RECAP SS, the Icon sample was non-detect. This location should be resampled to verify benzene is not present at the location above RECAP non-industrial SS. If benzene is confirmed, additional wells will need to be installed to horizontally delineate the location. Two (2) additional monitoring wells should be installed ⁶⁷ to monitor the area following the soil treatment/remediation for TPH Fractions, chlorides, barium, NORM, and dissolved metals. Additional monitoring wells may be required.

c. SW Tract

MW-4A Icon sample tested over screening standards for benzene and the ERM sample shows non-detect. This well should be resampled to verify benzene is not present at the location. If benzene is confirmed above RECAP SS standards, additional wells will need to be installed to horizontally delineate the benzene contamination. BC-23 should be monitored for arsenic, chlorides, and barium quarterly for a minimum of three (3) years after the soil is removed from the SB-13 area. Three additional wells should be installed downgradient of BC-24A, BC-23, and BC-9⁶⁸ to monitor groundwater for chlorides, NORM, barium and arsenic after remediation/soil treatment is completed. A fourth monitoring well should be installed downgradient of BC-11. Further wells may be required.

3. B ZONE

a. NE Tract

BC-7B and BC-8B should be monitored quarterly for chlorides, barium, and arsenic on a quarterly basis for a minimum of three (3) years after remediation/soil treatment is completed.

b. SE Tract

BC-28B should be monitored quarterly for chlorides, hydrocarbons barium and arsenic on a quarterly basis for a minimum of three (3) years after remediation/soil treatment is completed.

⁶⁷ See Figure 1, page 19.

⁶⁸ See Figure 1, page 19.

c. SW Tract

BC-22B and BC-24B should be monitored quarterly for chlorides, barium and dissolved metals on a quarterly basis for a minimum of three (3) years after remediation/soil treatment is completed.

V. COST ANALYSIS

A. General

The combined total cost for the known remediation and soil treatment areas, further delineation of constituents of concern and groundwater monitoring is \$2,173,317. This value does not include any further remediation or delineation that may be required once investigation and delineation is complete. Further costs will be provided in submittals by Chevron as the plans are developed and the areas are fully delineated.

1. SOILS

The cost of this MFP as written for soils is \$1,824,529. This value is based on previous MFP's written by the department and quotes obtained to professionals in the field.⁶⁹ The presumed pump shed is in a treatment area for soils. The cost was established for removal of this feature is \$2,612. This value is approximate based on photographic evidence and E&P Waste commercial facility estimates.⁷⁰

2. GROUNDWATER

The cost for the MFP as written for groundwater is \$199,140. This value is based on previous MFP's written by the department and quotes obtained from professionals in the field.⁷¹ It includes the installation and monitoring of monitoring wells on the Hero Lands property. If at the time of acceptance by the court, Hero Lands is still owned by the current landowner and the property will provide grazing land for cattle, the Panel has decided that it would be most feasible to accept Chevron's plan for Groundwater Supply Plan for Cattle Option 11.2. The total cost of this option will be \$133,000.⁷²

⁶⁹ See Table 1, page 21.

⁷⁰ See Table 2, page 23.

⁷¹ See Table 3, page -24.

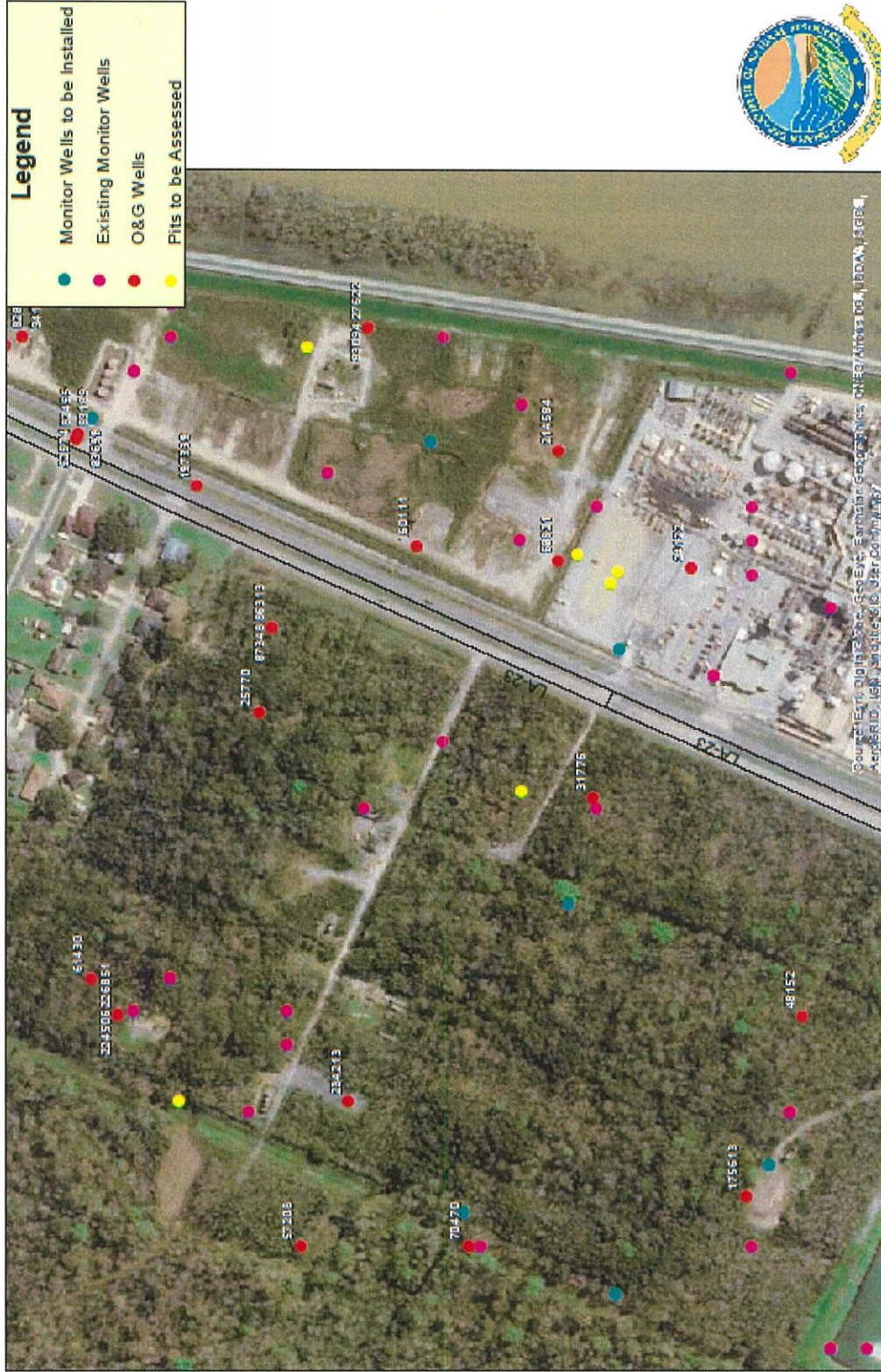
⁷² Chevron Exhibit 1 C_LDNR 00001-00035. Groundwater Supply Plan for Cattle, Belle Chasse Public Supply Alternative.

VI. CONCLUSION

In consideration of, and based on all the evidence, the LDNR Most Feasible Plan is supported by written reasons incorporated herein, is the most reasonable (feasible) plan which addresses the limited admission in conformity with the Louisiana Constitution, Article IX, Section 1 to protect the environment, public health, safety, and welfare, and is in compliance with the specific relevant and applicable standards and regulations as mandates by La. R.S. 30:29.

FIGURES

Figure 1



Map Compiled By:
 LDNR Office of Conservation
 Environmental Division KB | nak
 February 08, 2021



Coordinate System: NAD 1983

TABLES

Table 1

| Soil Excavation | Volume / Value | Unit | Cost | Cost Basis |
|--|-----------------------|---------------|------------------|-------------------|
| Pre-Job Deliverables / Site Visits | | | \$2,000 | RI |
| Project Mobilization - Site Prep | | | \$5,338 | RI |
| Demobilization | | | \$5,018 | RI |
| Labor | | 42 days | \$114,720 | RI |
| Equipment | | | \$89,640 | RI |
| Soil Disposal | 6947 CY/4,466 bbls | \$42.40/bbl | \$189,358 | R2 and R4 |
| Trucking (1&2) | 39 days | \$6,710/day | \$261,690 | RI and R2 |
| Truck Service | 39 days | \$100/day | \$3,900 | RI and R2 |
| Per Diem/Meals/Lodging (\$130/man/day) (5 man crew days) | 30 days | \$650/day | \$19,500 | RI |
| Per Diem/Meals/Lodging (\$130/man/day) (4 man crew days) | 12 days | \$520/day | \$6,240 | RI |
| Liners | 573 | \$33/liner | \$18,909 | RI |
| Misc. Supplies | 1 | \$20 | \$1,000 | RI |
| Diesel | 4,000 gallons | \$2.50/gallon | \$10,000 | RI and R2 |
| Site Restoration | | | \$250,652 | RI |
| Total | | | \$977,965 | |

| Soil Treatment | Volume / Value | Unit | Cost | Cost Basis |
|--|------------------------|-------------|------------------|-------------------|
| Pre-Job Deliverables / Site Visits | | | \$2,000 | RI |
| Mobilization / Site Prep | | 1 Day | \$3,980 | RI |
| Demobilization | | 1 Day | \$3,740 | RI |
| Treatment | 14 acres x 2 ft. depth | 128 Days | \$546,744 | R2 |
| Permitting, planning, oversight, sampling, and reporting | | 128 Days | \$235,000 | R2 |
| Total | | | \$791,464 | |

| Soil Evaluation / Sampling | Volume / Value | Unit | Cost | Cost Basis |
|--|-----------------------|-------------|-----------------|-------------------|
| Sample Analytical (Saltwater ditch) (7) | 48 Samples | \$150 each | \$7,200 | R3 and R5 |
| Sample Analytical (Unsampled pits) (8&9) | 35 Samples | \$150 each | \$5,250 | R3 and R5 |
| Sample Analytical (Additional vertical and horizontal delineation) (6) | 55 Samples | \$150 each | \$8,250 | R3 and R5 |
| Power Probe Mob/ Demobilization | Flat Rate | | \$1,900 | R3 and R5 |
| Power Probe (with crew and per diem) (10) | \$2,500 / Day | 13 Days | \$32,500 | R3 and R5 |
| Total | | | \$55,100 | |

Soils Total **\$1,824,529**

Soil Cost Continued:

Notes:

- 1 - Total loads based on 18 tons/load
- 2 - Trucking cost based on 5 trucks @ 2/loads/day/truck
- 3 - Additional soil excavation may be necessary pending the soil evaluation/sampling analytical data results
- 4 - Additional soil treatment may be necessary pending the soil evaluation/sampling analytical data results
- 5 - Additional soil samples may be necessary in order to establish a representative data collection of the pits and/or the saltwater drainage ditch
- 6 - Assumed 12-foot maximum depth for vertical delineation. This depth may increase or decrease depending on lab analytical results.
- 7 - Based on the Pisani expert presentation the diagram scales indicated that the saltwater discharge ditch is approximately 6,050 feet in length. Minimum of 250 feet samples at estimated 10 feet deep.
- 8 - Soil samples based off minimum of 4' deep for unsampled pit areas.
- 9 - Minimum of 5 samples per pit
- 10 - Estimate 100 feet per day soil sampling

Cost Basis - Reference:

- R1 - ERM - Diversified 8.28.20
- R2 - ERM - Michael Pisani expert hearing presentation
- R3 - Previous office of Conservation MFP's (State of Louisiana and the Vermillion Parish School Board and Martha Zoe Moore, et al v. Denbury Onshore, LLC)
- R4 - Current Rates from Fourchon Transfer Station
- R5 - Driller who performs similar work and Consultant who manages projects which includes monitor well installation and sampling

Table 2

| Former Pump Shed | Cost Rate | Dimensions | Cost | Cost Basis |
|---------------------------------|----------------------|-------------------|-------------|-------------------|
| Concrete Slab disposal | \$3.06 / Square Foot | 200 Square Feet | \$612 | S1, S2, & S4 |
| Shed Removal (including debris) | | | \$2,000 | S1 and S4 |

Shed Removal Total:

\$2,612

Notes:

S1 - Shed dimensions estimated 20' x 20' according to Google Earth measurements.

S2 - Concrete dimensions estimated according to 1/28/21 photos submitted by Kean Miller.

S3 - Office of Conservation, Environmental Division Exploration and Production Waste commercial facility estimated Closure Rates.

S4 - Shed removal prices determined by internet search of average cost to remove sheds

Table 3

| MW Installation | | | Cost per | Unit | Total Cost | Cost Basis | | |
|---|--------------------------|-----------|------------------|-------------|--------------------|---------------------|-------------------|-------------------|
| Mobilization/Demobilization (1) | Cost included with Soils | | | | | | | |
| MW Installation Labor (crew and per diem) (2) | \$2500 / Day | 2 Days | \$5,000 | | | R1 & R2 | | |
| MW Completion | \$500 / MW | 7 wells | \$3,500 | | | R1 & R2 | | |
| 2" PVC Materials | \$15 unit / foot | 105 Feet | \$1,575 | | | R1 | | |
| Pre packed well screens | \$175 each | 7 screens | \$1,225 | | | R1 | | |
| Oversite, Development, and Equipment (2) | \$1,500 day | 2 days | \$3,000 | | | R1 | | |
| Total | | | \$14,300 | | | | | |
| MW Sampling | | | Cost per | Unit | Frequency | Sample Total | Total Cost | Cost Basis |
| Labor to Sample (3) | \$500 / MW | 20 | \$10,000 | | | 20 | \$10,000 | R2 |
| Analytical (RCRA metals, TDS, BTEX, TPH-G, TPH D, and TPH-O) | \$328 / sample | 20 | \$78,720 | | Quarterly/ 3 Years | 240 | \$78,720 | R1 |
| Analytical (Radium 226 / 228) | \$70 / sample | 3 | \$2,520 | | Quarterly/ 3 Years | 36 | \$2,520 | R1 |
| Analytical (Alkalinity, Mercury, Sulfate, Bromide, Chlorides) | \$180 / sample | 20 | \$43,200 | | Quarterly/ 3 Years | 240 | \$43,200 | R1 |
| Sampling Equipment | \$350 / event | 12 | \$50,400 | | | 144 | \$50,400 | R1 |
| Total | | | \$184,840 | | | | | |
| Background Well Sampling | | | Cost per | Unit | Frequency | Sample Total | Total Cost | Cost Basis |
| Labor to Sample (3) | \$500 / MW | 3 | \$1,500 | | | 3 | \$1,500 | R2 |
| Analytical (RCRA metals, TDS, BTEX, TPH-G, TPH D/O) | \$328 / sample | 3 | \$3,936 | | Quarterly/ 1 Year | 12 | \$3,936 | R1 |
| Analytical (Radium 226 / 228) | \$70 / sample | 3 | \$840 | | Quarterly/ 1 Year | 12 | \$840 | R1 |
| Analytical (Alkalinity, Mercury, Sulfate, Bromide, Chlorides) | \$180 / sample | 3 | \$2,160 | | Quarterly/ 1 Year | 12 | \$2,160 | R1 |
| Sampling Equipment | \$350 / event | 4 | \$5,600 | | | 16 | \$5,600 | R1 |
| Total | | | \$14,036 | | | | | |

\$213,176

Groundwater Total

Groundwater Cost Continued:

Notes:

- 1.- Presumption that same rig and equipment will be utilized for soil samples and monitor well installation
- 2 - Monitor well installation based on 60 feet per day. Each monitor well to be installed estimated at 15 feet each.
- 3 - 7 MW's will be new installation and 13 MW's are existing

Cost Basis-Reference

- R1 - Previous office of Conservation MFP's (State of Louisiana and the Vermillion Parish School Board and Martha Zoe Moore)
- R2 - Driller who performs similar work and consultant who manages projects which includes monitor well installation and sampling

EXHIBITS

EXHIBIT A

**April 1, 2021, Reasons of Commissioner in Support of Administrative Law
Judge Order Denying Plaintiff's Motion in Limine**

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF CONSERVATION

CONSERVATION DOCKET NO: ENV-2020-L01
DIVISION OF ADMINISTRATION DOCKET NO: 2020-9442-DNR

REASONS OF COMMISSIONER
IN SUPPORT OF ADMINISTRATIVE LAW JUDGE ORDER
DENYING PLAINTIFF'S MOTION IN LIMINE

Hero Lands Company, L.L.C. (hereinafter "Hero Lands" and/or "Plaintiff") sued Chevron U.S.A. Inc. ("Chevron") in Plaquemines Parish in 2018 seeking damages and remediation of property owned by Plaintiff Hero Lands. Chevron made a limited admission as a responsible party pursuant to La. R.S. §30:29 ("Act 312") on July 29, 2020, and pursuant to order of the court in Plaquemines Parish, Chevron submitted its Limited Admission Plan to the Louisiana Department of Natural Resource, Office of Conservation ("OOC") on September 8, 2020. The public hearing was held on December 14, 16-18, and December 21, 2020.

THE MOTION IN LIMINE

Prior to the public hearing, on December 4, 2020, Hero Lands filed a Motion *in Limine* to Exclude, in part, Chevron's Limited Admission Plan (the "Motion"). The Motion asserted that Hero Lands did not consent to the use of any exception to Statewide Order 29-B, including the use of LDEQ's RECAP. Chevron opposed the Motion on December 10, 2020, attaching to its written opposition a December 12, 2018 memorandum of John W. Adams, OOC attorney, to Commissioner Richard P. Icyoub on the landowner consent issue (the "12/12/18 Memorandum"). The 12/12/18 Memorandum is attached hereto as **Exhibit A**. On December 15, 2020, the Administrative Law Judge signed an order denying the Motion and allowing Chevron to present

evidence of its proposed plan to the OOC Panel. The 12/15/20 ALJ Order is attached hereto as Exhibit B.

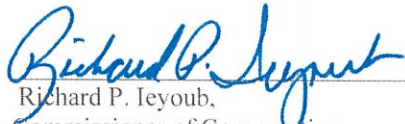
REASONS IN SUPPORT OF ALJ ORDER

OOC has required landowner consent for cleanup plans which include exceptions to 29-B in regulatory actions, including those pursuant to Act 312, for site evaluation and/or remediation of oilfield sites in cases where no Act 312 contradictory public hearing is involved. However, where an Act 312 contradictory public hearing is involved, OOC has not considered landowner consent necessary. There is a valid basis for distinguishing between public hearing cases and non-public hearing cases on the issue of landowner consent: 1) landowner consent is not explicit in the regulations, 2) the public hearing process is a contradictory process giving the landowner the opportunity to offer a competing plan and/or comments to the responsible party's plan, of cross-examination of the responsible party's witnesses, and to put on evidence, and 3) the court has continuing oversight of the entire process after the structuring of the MFP in the public hearing, including conducting a preponderance hearing if necessary, ensuring funding of the plan, and ensuring compliance of the plan right up to the time remediation is completed, so there is no basis for landowner consent as a requirement in Act 312 public hearing cases.

However, because some landowners in prior Act 312 public hearings have taken the position that landowner consent should also be required even where there is an Act 312 public hearing, OOC's attorney was requested to prepare his 12/12/18 Memorandum for the Commissioner for the Office of Conservation's future guidance on this issue. The Memorandum notes that the overriding interest in Act 312 is the public interest, and that requiring landowner consent for a most feasible plan in all events, even if the evidence at the public hearing does not support a finding that such a plan (i.e., the plan requiring landowner consent) is the most feasible

plan, could result in the structuring of a plan by OOC that is not the most feasible from the standpoint of the public interest.

OOO reaffirms the position stated in the 12/12/18 Memorandum as OOC policy on the issue of landowner consent in the context of an Act 312 public hearing and adopts the position set forth in the Memorandum as the Reasons of the Commissioner in support of 12/15/20 ALJ Order.



Richard P. Ieyoub,
Commissioner of Conservation
Office of Conservation

Date: 4-1-2021



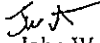
JOHN BEL EDWARDS
GOVERNOR

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF CONSERVATION

THOMAS F. HARRIS
SECRETARY

RICHARD P. IEYOUB
COMMISSIONER OF CONSERVATION

MEMORANDUM

TO: Richard P. Ieyoub, Commissioner of Conservation
FROM:  John W. Adams, Attorney, LDNR/Office of Conservation
DATE: December 12, 2018
RE: Landowner Consent

ISSUE

Should landowner consent be required for a Most Feasible Plan (MFP) including exceptions to LAC 43:XIX.Subpart 1 (Statewide Order 29-B) which is approved or developed by the Agency as a result of evidence at an Act 312 public hearing?

THERE IS NO BASIS FOR REQUIRING LANDOWNER CONSENT FOR MFP ISSUED TO A REVIEWING COURT IN CONTEXT OF AN ACT 312 PUBLIC HEARING

Landowner consent has not been required by Louisiana Department of Natural Resources, Office of Conservation (hereinafter "LDNR/OC" or "Agency") when a case goes through an Act 312 public hearing and a Most Feasible Plan including exceptions to LAC 43:XIX.Subpart 1 (29-B) is approved or developed as a result of evidence at an Act 312 public hearing. The reason is that the court is an active participant in that situation, as explained more fully below.

Act 312 took effect in 2006 when the Governor signed Senate Bill 655 of the 2006 Regular Session into law. La. Acts 2006, No. 312, eff. June 8, 2006, which is codified at La. R.S. 30:29. Act 312 set forth requirements for pursuing claims for environmental damages caused by oilfield operations. It was immediately challenged as unconstitutional by landowner, M.J. Farms, Ltd., which owned property in Catahoula Parish on which it claimed certain defendants had caused environmental damage from oil and gas operations. The constitutional basis for the landowner's challenge was that Act 312 violated La. Const. art. V, § 16 (divestiture of the district courts of original jurisdiction), the Fifth Amendment of the United States Constitution (the deprivation of a landowner of his property without due process), and La. Const. art. I, § 4 (divestiture of the landowner's right to acquire, own, control, use, enjoy, protect and dispose of private property). The first basis was a denial of "access to courts" argument. The Seventh Judicial District Court in Catahoula Parish entered a judgment declaring Act 312 unconstitutional. On appeal, the Louisiana Supreme Court concluded the district court erred in finding Act 312

of 2006 unconstitutional. *M.J. Farms, Ltd. v. Exxon Mobil Corp.*, 2007-2371 (La. 7/1/08), 998 So.2d 16. On the “access to courts” argument, the Court said the following:

Although Act 312 changes the remedy available to M.J. Farms in its efforts to obtain surface restoration of its immovable property, we do not find this denies it access to the courts. To the contrary, under the provisions of Act 312 the district court remains an active participant in the entire restoration process. It is the filing of pleadings in the district court making demand for environmental damages that triggers implementation of Act 312. See La.Rev.Stat. § 30:29(B)(1). Furthermore, it is in the district court that it is determined whether environmental damages exists, who caused the damage, and it is the district court that orders the development of a restoration plan. La.Rev.Stat. § 30:29(C)(1). Finally, it is the district court who considers the various restoration plans, including any that the surface owner may choose to submit, determines which one is most feasible, and oversees the implementation of the restoration plan. La.Rev.Stat. § 30:29(C)(5). Accordingly, we find no merit to M.J. Farms' contrary assertion.

Id., at 37-38. See also *State v. Louisiana Land & Exploration Co.*, 2012-0884 (La. 1/30/13, 110 So.3d 1038, 1057.

LDNR/OC has required landowner consent for cleanup plans which include exceptions to 29-B in regulatory actions, including those pursuant to Act 312, for site evaluation and/or remediation of oilfield sites in cases where no Act 312 contradictory public hearing is involved. Landowner consent is required even though this is not explicitly set forth as a requirement for a cleanup plan anywhere in the regulations. LDNR/OC has looked to the definition of “contamination” in Statewide Order No. 29-B, specifically in LAC 43:XIX.301, which is “the introduction of substances or contaminants into a groundwater aquifer, a USDW or soil in such quantities as to render them unusable for their intended purposes.” It is in reliance on this definition that LDNR/OC has required landowner consent as a matter of practice in cases where there is no contradictory hearing because, as it has said, “only a landowner or court of law can truly make a decision as to what a given property’s “intended purpose” is.” See e.g., Letter of James H. Welsh, Commissioner of Conservation, to Louis E. Buatt, Esq., attorney for BP, dated 10/27/15.

But the Act 312 public hearing cases with an issued Most Feasible Plan with 29-B exceptions have been treated differently because the court is an active participant. There have been seven cases where a MFP with 29-B exceptions was issued to a reviewing court as a result of evidence at an Act 312 public hearing, which as described below, is a contradictory hearing. Landowner consent has not been required by the reviewing court in any of those cases. (See [Appendix A](#) at the end of this Memorandum). It is important to recognize that the Agency’s consistent application of the law and regulations in accepting or developing MFP’s with 29-B exceptions issued to reviewing courts specific to the issue of landowner consent has been, to date, accepted by the reviewing courts and participating parties.

There is a valid basis for making a distinction between the public hearing cases and the non-public hearing cases on the issue of whether landowner consent is required. Unlike the non-public hearing cases, in the public hearing cases the landowner has the opportunity to put forth a competing plan and/or comments to the responsible party’s plan. Also, during the public hearing, the landowner has the right and opportunity to put on evidence to protect and/or advance the landowner interest. The hearing is contradictory in nature and permits cross-examination of the responsible party’s witnesses by the landowner, and also permits cross-examination of the landowner’s witnesses by the responsible party. The LDNR/OC panelists also get to ask their own questions of witnesses about the competing plans. Since the landowner is present to defend and advance the landowner interest, LDNR/OC panelists can focus on the public interest as intended by Act 312. In addition to this contradictory hearing, the Act 312 process includes substantial opportunity for active court involvement after the MFP is structured by LDNR/OC (see steps 6 and 7 below). The process from start to finish includes:

1. Step 1 The plaintiff/landowner files suit, and the court holds a trial to determine that environmental damage exists and the party or parties who caused the damage.” La. R.S. 30:29(B) & (C)(1).
2. Step 2 The court orders the responsible party to develop and submit a remediation plan(s) to LDNR/OC for review and consideration. La. R.S. 30:29(C)(1).
3. Step 3 The plaintiff/landowner is given the opportunity to provide a landowner plan or provide comment or response to the other plan(s). La. R.S. 30:29(C)(1).
4. Step 4 LDNR/OC conducts a public hearing—a contradictory hearing—on the plan(s). La. R.S. 30:29(C)(2)(a).
5. Step 5 LDNR/OC accepts a plan submitted, or structures a plan, based on the evidence, which LDNR/OC determines to be the Most Feasible Plan to evaluate or remediate the environmental damage and protect the health, safety and welfare of the people. La. R.S. 30:29(C)(2)(a).
6. Step 6 The court adopts the LDNR/OC plan unless a party proves to the court by a preponderance of the evidence that another plan is a more feasible plan to adequately protect the environment and the public health, safety and welfare. La. R.S. 30:29(C)(5).
7. Step 7 The court issues such orders as necessary to ensure that funds are expended in a manner consistent with the adopted plan, retains oversight to ensure compliance with the plan, and retains continuing jurisdiction until such time as the evaluation or remediation is completed. La. R.S. 30:29(D) & (F).

Since 1) landowner consent is not explicit in the regulations, 2) the public hearing process is a contradictory process giving the landowner the opportunity to offer a competing plan and/or comments to the responsible party’s plan, of cross-examination the responsible party’s witnesses, and to put on evidence, and 3) the court has continuing oversight of the entire process after the structuring of the MFP in the public hearing, including conducting a preponderance hearing if necessary, ensuring funding of the plan, and ensuring compliance of the plan right up to the time remediation is completed, there is no basis for landowner consent as a requirement in Act 312 public hearing cases.

The overriding interest in Act 312 is the public interest. *See* La. R.S. 30: 29(A). Requiring landowner consent for a plan in all events, even if the evidence at the public hearing does not support a finding that such a plan (i.e., the plan requiring landowner consent) is the most feasible plan, would, or could, result in the structuring of a plan by LDNR/OC that is not the most feasible from the standpoint of the public interest (i.e., from the standpoint of protection of the environment, public health, safety and welfare).

Finally, should a party feel aggrieved by the Agency’s acceptance or development of an MFP and issuance to a reviewing court following court referral pursuant to the agency mandated Act 312 public hearing process, the aggrieved party’s legal recourse is and remains with the reviewing court.

APPENDIX A

The seven LDNR/OC Act 312 public hearing cases with issued MFP to date are as follows:

1. **In Re: Tensas Poppadoc, et al v. Chevron (USA), Inc., et al, LDNR/OC Docket No. ENV 2008-L-01:**
(Responsible Party—Chevron) (Act 312 public hearing February 9-13 and 16, 2009):

This was the first Act 312 public hearing case. It came shortly after Act 312 was held constitutional in 2008. Numerous defendants, including Chevron, were sued by Tensas Poppadoc in 2006 pursuant to La. R.S. 30:29 alleging soil and groundwater contamination on the Tensas Poppadoc property. The case was tried to a jury in Concordia Parish in 2008. Following the jury trial, the trial court signed an order which sent the matter to LDNR/OC for consideration of a remediation plan submitted by Chevron. The court's order stated that the trial court retained jurisdiction pending approval and completion of an approved remediation. An LDNR/OC three-person panel conducted an Act 312 hearing on February 9-13 and 16, 2009. The Most Feasible Plan adopted by LDNR/OC required further collection of site data before a final remedy could be approved. Plaintiff objected to the Most Feasible Plan and appealed to the trial court in Concordia Parish. The case settled in 2014. Following settlement, Chevron moved forward with implementation of the Most Feasible Plan. The Final Report on the last round of data is due to be submitted to LDNR/OC in January 2019.

2. **In Re: Clyde Reese, et al v. Carl Oil & Gas Co., et al, LDNR/OC Docket No. ENV-2012-L-001:**
(Responsible Party—UNOCAL) (Act 312 public hearing March 21, 2012):

The landowners sued Union Oil Company of California (UNOCAL) and other operators in 2006 for alleged damage to approximately 692 acres in Sections 4 and 5, Township 12 South, Range 2 West, Vermilion Parish, West Gueydan Field, arising from oil and gas operations. UNOCAL and/or its predecessor, The Pure Oil Company, operated four wells on approximately 50 acres of the property at issue ("UNOCAL Operational Tract" or "UOT"). UNOCAL filed a limited admission of liability under Act 312, admitting that "environmental damage" existed on the UOT (that portion of the acreage at issue referred to by landowners as the "Benoit Tract"), and praying for an order accepting that admission, ordering UNOCAL to develop an evaluation/remediation plan, and otherwise ordering the post-admission actions required under Act 312. The court signed an order on September 12, 2011 accepting UNOCAL's admission and ordering submission of a plan to LDNR/OC. The UNOCAL plan was submitted to LDNR/OC on November 28, 2011. A public hearing was held before LDNR/OC on March 21, 2012. On May 17, 2012, LDNR/OC submitted the Most Feasible Plan to the trial court. On July 16, 2012, the court issued an order adopting the MFP. Work is ongoing on the Benoit Tract pursuant to the MFP. The underlying litigation is still pending.

3. **In Re: Hazel Richard Savoie, et al v. Alice T. Richard, et al, LDNR/OC Docket No. 2012-L-002**
(Responsible Party—Shell) (Act 312 public hearing August 7-10 and 13, 2012):

Shell Oil Company was sued along with subsequent operators in a lawsuit by the landowners, Hazel R. Savoie and family, in state district court in Cameron Parish relating to historical operations in the Kings Bayou Field. After a 2011 jury trial and verdict finding the existence of environmental damage and Shell as a responsible party, a public hearing was held at LDNR/OC from August 7-10 and 13, 2012 to determine the most feasible plan for the site. During the hearing, the landowner presented the LDNR/OC panel with an affidavit attesting to their intended use of the property and refusal to consent to any exceptions to Statewide Order No. 29-B. Following the hearing, in consideration of the landowner's testimony presented during the public hearing, LDNR/OC made modifications to the Shell plan, which LDNR/OC then recommended to the court as the most feasible plan. The landowners filed a motion for a preponderance hearing in the trial court to challenge the plan but withdrew the

motion on the second day of the hearing. The court then adopted the LDNR/OC-recommended plan as the most feasible plan. Shell is currently implementing the plan and continues to work with LDNR/OC on the remediation. In 2015, Shell and the landowners settled ancillary issues, and LDNR/OC issued a letter of no objection.

4. In Re: Agri-South, LLC, et al v. Exxon Mobil, et al, LDNR/OC Docket No. ENV-2013-L-02
(Responsible Party—Tensas Delta) (Act 312 public hearing August 5-9 and 13-16, 2013):

Tensas Delta Exploration Company and ExxonMobil Corporation were sued along with others in a legacy lawsuit by the landowners, Agri-South Group, LLC; Plug Road, LLC; and King Brothers Land Company, LLC., in state district court in Catahoula Parish. In connection with this litigation, Tensas Delta made a limited admission of responsibility and submitted its remediation plan pursuant to La. CCP art. 1563 and La. R.S. 30:29 on January 25, 2013. Plaintiffs/landowners submitted an alternative remediation plan for LDNR/OC's consideration. LDNR/OC held a public hearing August 5-9 and 13-16, 2013 for the purpose of approving or structuring a final plan. On October 3, 2013, LDNR/OC submitted its most feasible plan to the court as required by La. R.S. 30:29(C)(3)(b)(ii). Following submission of the most feasible plan, the litigation progressed until the parties reached a settlement agreement. A redacted form of the settlement between the parties was submitted to LDNR/OC. LDNR issued a letter of no objection to the proposed settlement dated December 16, 2014.

5. In Re: Martha Zoe Moore, et al v. Denbury Onshore, LLC, LDNR/OC Docket No. ENV-2015-L-01:
(Responsible Party—Denbury) (Act 312 public hearing August 25-26, 2015):

The Moore family landowners filed suit against Denbury Onshore, LLC over a spill incident in March 2013. Denbury made a limited admission of responsibility pursuant to La. C.C.P. art. 1563 and La. R.S. 30:29 on January 25, 2013. On March 23, 2015, Magistrate Judge Karen Hayes of the federal Western District of Louisiana, Monroe Division, signed the requested order and referred the matter to the LDNR/OC for a public hearing. Remediation plans were submitted by both Denbury and the Moore family. A public hearing was held on August 25-26, 2015 and LDNR/OC issued its Most Feasible Plan which was filed with the federal court in Monroe, Louisiana on October 22, 2015. The *Moore* case settled on the eve of trial in 2016. Part of the settlement involved an agreed to scaling back of the scope of the Most Feasible Plan adopted by the LDNR/OC, and LDNR/OC agreed to the revised plan. The settlement was approved by the court. Denbury is still executing part of the revised plan that involves groundwater monitoring in one well, and a vegetative recovery assessment that will be conducted in mid-2019.

6. In Re: State of Louisiana and the Vermilion Parish School Board v. The Louisiana Land and Exploration Co., Union Oil Company of California, Union Exploration Partners, Ltd., Carrollton Resources, L.L.C. and Phoenix Oil & Gas Corporation, LDNR/OC Docket No. ENV-L-2016-01
(Responsible Party—UNOCAL) (Act 312 public hearing March 2-4, 7-10, 2016):

This case was filed by the Vermilion Parish School Board against numerous defendants in 2004. In 2010, UNOCAL filed an admission of environmental damage under R.S.30:29. The case was tried to a jury in Vermilion Parish in 2015, with UNOCAL and Chevron as the only remaining defendants. Based upon UNOCAL's admission, the jury found environmental damage and found UNOCAL responsible. After a jury verdict with a remediation plan of \$3 million, the court referred the matter to LDNR/OC, where a public hearing was held on March 2-4 and 7-10, 2016 before a LDNR/OC panel. LDNR issued its Most Feasible Plan in July 2016. Plaintiff landowner objected to this plan in so far as it ordered UNOCAL, and not plaintiff, to implement the plan. The Most Feasible Plan was affirmed by the trial court and the court of appeal. UNOCAL is currently in the process of implementing the Most Feasible Plan. A final judgment has been entered in the trial court and various matters

are awaiting appeal, except plaintiff's motion for attorney's fees which is set for hearing beginning December 4, 2018.

7. **In Re: The Sweet Lake Land & Oil Company, LLC v. Oleum Operating Company, LLC, LDNR/OC Legacy Project No. 014-006-001** (Responsible Party—BP) (Act 312 public hearing April 25-28, 2016):

Sweet Lake Land & Oil Company, LLC, filed a petition on March 5, 2010, seeking damages caused by oil and gas operations from BP Products North America, Inc. and other defendants, to property Sweet Lake owned in Section 34, Township 10 South, Range 6 West, in Calcasieu Parish, in the East Bell City Oil and Gas Field. BP predecessors operated 10 wells, including two saltwater disposal wells on the property. By the time of trial, May 11, 2015 through May 27, 2015, the only remaining defendants were BP and Oleum/AKSM. The jury found that BP was responsible for "environmental damage" under Act 312 and estimated the remediation costs to be \$1,500,000.00. The trial court referred the matter to LDNR/OC for Act 312 public hearing proceedings. BP and Sweet Lake submitted proposed plans to LDNR/OC. A public hearing was held from April 25-28, 2016. On October 3, 2016 LDNR/OC issued its Most Feasible Plan, essentially agreeing with the soil remediation plan of BP's experts, including soil restoration where proposed, with additional requirements for sampling and delineation. The MFP rejected both parties' experts' groundwater plan and ordered BP to submit a comprehensive groundwater investigation and aquifer characterization work plan. The MFP adopted by LDNR/OC require soil remediation for 29-B salt exceedances to root zone depth and used RECAP to address constituents with no standards in Statewide Order No. 29-B. A hearing in the trial court was held February 15, 2017 on BP's motion to adopt the MFP. The court denied the motion and ordered LDNR/OC to "submit a final plan to the court that includes a remediation plan for all environmental damage to be remediated." The court ordered LDNR/OC to state remediation options based on different outcomes in the further evaluation of shallow groundwater. The court also ordered LDNR/OC to "specify the flowlines on the property and include a remediation plan for flowlines that must be removed." BP sought writs from this ruling, which were denied. On October 26, 2017, LDNR/OC issued a compliance order in response to the court's ruling, which stated that in order to obtain the necessary information pursuant to satisfying the court's directive for additional information pertaining to final remediation of the Sweet Lake property, specific aspects of LDNR/OC's Plan must be completed and reported to the Agency for consideration, all incumbent upon the responsible party, BP, of which the court and all parties were informed with no subsequent response provided to the Agency from any party in opposition or to the contrary. The Agency's application of the law and regulation on the matter of landowner consent and its MFP decision was not an apparent issue before the court. On October 5, 2018 LDNR/OC approved HET's (BP's expert's) January 19, 2018 evaluation plan and work under the plan commenced on November 2, 2018.

EXHIBIT B

Panelists and Their Backgrounds

1. **Ms. Jamie C.T. Love.** Ms. Love has a B.S. in geology from University of Missouri-Kansas City (UMKC) in 2005, and an M.S. in Geosciences from Mississippi State University in 2008. She is a licensed geoscientist in the State of Louisiana, license number 258. Her training at UMKC focused in environmental methods, natural hazards and paleo-seismic studies. Her research at Mississippi State concentrated on suspended sediment transport. She worked as a hazardous materials cleanup manager from 2004 to 2006. In 2008 she joined LDEQ as a Geologist focusing on RCRA remediation. While at LDEQ she participated in Hurricane Incident Command and the BP Oil Spill. She joined LDNR in 2015 as a Geologist Supervisor. This position manages the groundwater resources group. Other duties of her position include the review of legacy cases for 29-B and RECAP compliance. In 2019 the position title was changed to a Petroleum Scientist Manager. She previously served on the LDNR panels for Public Hearings held pursuant to Act 312 in *Moore* (2015), *Sterling Sugars* (2015), *Vermilion Parish School Board* (2016), and *Sweet Lake* (2016) cases.
2. **Mr. Christopher M. Delmar.** Mr. Delmar has a B.S. in geology from Louisiana Tech University in 2002, and attended LSU for two years in the Masters program for geology with specialization in hydrogeology. He completed all of the Masters work with the exception of completing his thesis. He joined LDEQ in 2005 as an Environmental Program Analyst, and then moved to an Environmental Scientist in the chemical accident prevention program. In 2008, he joined LDNR as a geologist working in the legacy group and groundwater resources group. He is currently a Petroleum Scientist Supervisor with the E&P Waste Section. His main focus is on hydrogeology and groundwater modeling. He served on the LDNR panel in the *Savoie* (2012), *Avahoula Resources* (2013), *Agri-South, LLC* (2013), and *Sweet Lake* (2016) cases.
3. **Mr. Stephen Olivier.** Mr. Olivier has a B.S. in renewable natural resources from Louisiana State University in 2006. He worked as an Environmental Scientist at C.H. Fenstermaker and Associates from June 2006 to September 2007. There he performed wetland delineations, endangered species surveys, and phase I surveys. He joined LDNR in 2007 as an Environmental231 Impact Specialist working in the Exploration and Production (E & P) Waste Section of the Environmental Division. His duties included management of E & P waste commercial facilities and transfer stations where he performed permit compliance review site inspections, enforcement matters, permit applications, commercial class II monthly injection well pressure reports, and closure plan and cost estimates. In 2017 he began supervising personnel in both the Legacy and E & P waste sections. In addition, his responsibilities include continued duties in the E & P waste section as well as above ground issues in the Legacy section, mainly evaluation of data pertaining to soils, vegetation, and groundwater, particularly with regard to standards under RECAP.

4. **Ms. Abigail Toohey.** Ms. Toohey received a B.S. in Marine Biology with minors in History and Diving Technology & Methods from Texas A&M University in 2017. She previously worked as an Undergraduate Researcher for the Chemistry Department at Texas A&M University at Galveston where her research was centered on theoretical protein modeling and crystallization. She joined LDNR in May 2018 as an Environmental Scientist working in the Exploration and Production (E&P) Waste Section of the Environmental Division. Her main duties included helping manage E&P waste commercial facilities and transfer stations where she performed permit compliance review site inspections and reviewed permit applications. She also handled all temporary approvals to transport E&P waste permits, commercial facility monthly report of waste receipts, and auditing E&P waste shipping control tickets (manifest forms). In 2019, her title changed to Petroleum Scientist. She still performs duties in the E&P waste section but became involved heavily in the Legacy section. She handles and reviews the receipt of all 29-B legacy data, handles compliance of operators with regulatory criteria exceedances, tracks all new petitions for damages and settlements.

EXHIBIT C

Expert Witnesses Who Testified on Behalf of Chevron

1. **Mr. David G. Angle.** Mr. Angle received a B.S. in Geology from the University of Delaware in 1982 and an M.S. in Geology from North Carolina State University in 1985. He is a Certified Professional Geologist, a Certified Ground Water Professional, and a Registered Geologist in Louisiana, Mississippi, and Texas. Mr. Angle's CV is admitted in evidence as Chevron Exhibit 1 C_LDNR 00001-00269 to C_LDNR 00001-00272. The parties stipulated that he is an expert in the areas of geology, hydrogeology, site assessment, remediation, environmental regulatory standards, and soil and groundwater fate and transport. Hearing Transcript, December 14, 2020, page 60, lines 16 through 19 and page 64-65 lines 21 through 1.
2. **Mr. Michael E. Pisani.** Mr. Pisani received a B.S. in Civil Engineering from Auburn University in 1975, and an M.S. in Environmental Engineering from Georgia Institute of Technology in 1981. He is a Registered Professional Engineer in the States of Louisiana and Texas. Mr. Pisani's CV is admitted in evidence as Chevron Exhibit 1 C_LDNR 00001-00273 to C_LDNR 00001-00279. The parties stipulated that he is an expert in the fields of environmental engineering, environmental investigation, remediation, remediation costs, oilfield remediation, regulatory practices, and construction management. Hearing Transcript, December 17, 2020, page 108, lines 5 through 11 and page 109, lines 22 through 25.
3. **Ms. Angela M. Levert.** Ms. Levert received a B.S. in Chemistry from Spring Hill College in 1988 and an M.S. in Environmental Chemistry from the University of North Carolina in 1990. Ms. Levert's CV is admitted in evidence as Chevron Exhibit 1 C_LDNR 00001-00111 through C_LDNR 00001-00115. She has been practicing in the area of human health risk assessment for many years. She has worked with the LDEQ RECAP program since it began as a draft in 1996, and has prepared hundreds of RECAP assessments, Hearing Transcript, December 17, 2020, page 216, lines 16 through 24. The parties stipulated that she is an expert in the fields of human health risk assessment, environmental data evaluation, RECAP, and environmental chemistry. Hearing Transcript, December 17, 2020, page 215 through 216, lines 14 through 6.
4. **Dr. John Kind.** Dr. Kind has a B.S. in Biochemistry/Toxicology from Murray State University in 1993 and a Ph.D. in Toxicology from the University of Georgia in 2000. Dr. Kind's CV is admitted in evidence as Chevron Exhibit 6 C_LDNR 00006-00045 through C_LDNR 00001-00054. He is a Board-Certified Industrial Hygienist and Board Certified Safety Profession with 20 years experience in risk assessment and toxicology. The parties stipulated that he is an expert in the fields of toxicology and human health risk assessment. Hearing Transcript, December 18, 2020, page 66, lines 18 through 22 and page 68 to 69, lines 25 through 03.
5. **Dr. Helen Connelly, Ph.D.** Ms. Connelly has a B.S. in Geology from Louisiana State University, and a Ph.D. in Geology from Louisiana State University School of Veterinary

Medicine. Dr. Connelly's CV is admitted in evidence as Chevron Exhibit 4 C_LDNR 00004-00038 to C_LDNR 00004-00129. She is an adjunct Professor at the Louisiana State University Department of Environmental Sciences, Energy, Coast and the Environment and 17 years of experience in toxicology and risk assessment. The parties stipulated that she is an expert in the fields of ecotoxicological risk assessment and wetlands sciences. Hearing Transcript, page 133, lines 5 through 20.

6. **Dr. Luther Holloway.** Dr. Holloway received a B.S. in Wildlife Management from Louisiana Tech University, Ruston, Louisiana in 1966, he received his M.S. in Fisheries Biology from Louisiana State University in 1969, and his Ph.D. in Plant Pathology from Louisiana State University in 1971. Dr. Holloway's CV is admitted in evidence as Chevron Exhibit 5 C_LDNR 00005-00073 to C_LDNR 00005-00084. Dr. Holloway was tendered as an expert in botany, plant ecology, soil and agronomic practices, and root zone analysis. Hearing Transcripts, December 18, 2020, page 231-232, lines 5 through 10.
7. **Dr. John R. Frazier.** Dr. Frazier received his B.A. in Physics from Berea College in 1970 and his M.S. and Ph.D. in Physics from the University of Tennessee in 1973 and 1978 (accordingly). Dr. Frazier's CV is admitted in evidence as Chevron Exhibit 8 C_LDNR 00008-00011 to C_LDNR 00008-00016. Dr. Frazier has held a Comprehensive Certification in Health Physics since 1981 and 43 years of Professional Experience. 25 of his 43 years are experience with the assessment of radioactivity in soil and groundwater at Oil and Gas E&P Sites. He was tendered by the parties as an expert in the fields of soil and groundwater radioactivity in health physics and environmental science. Hearing Transcript, December 21, 2020, page 89, lines 12 through 21.

Witness Who Testified on Behalf of Hero Lands

8. **Mr. George Hero, IV.** Mr. Hero is the landowner for the Property. He was not tendered as an Expert but for his knowledge of the property and for better understanding of the current and potential future uses of the property.

EXHIBIT D

NARRATIVE REPORT

DNR/Office of Conservation
Operations Division

| | | |
|--|-------------------------|--------------------------------|
| Serial Number S#83094/S#160111 | Date 02/12/21 | Operator McGowan () |
| Lease Name | | Address |
| Location (Sec, Twp, Rng / Parish) | | |
| Field Stella () | Phone () - | |
| Contact Mark Romero - McGowan | | |

R E M A R K S

I can't say that the aforementioned shed is associated with either S#83094 or S#160111. In talking to McGowan representative, Mark Romero, who is the current lease operator and has been operating the lease for the last 9+ years, there are currently no wells on the lease that are tied to this shed. He also told me he's talked to the operator of the lease before his tenure, and was told there was no well on the lease associated with that shed in the last 30+ years. I will enter LFIRs for both of the serial numbers above; but as I can see, both would be in compliance. Mark told me if we wanted him to tear the shed down, he's willing to do so.

_____ (Name and Title of Company Representative)

Joseph Legarde

(CES Signature)

Original / Bacon Rouge, Yellow / Operator, Pink / Inspector

EXHIBIT E

LDEQ Communication Re. Dioxins/Furans

From: Celeste Bonnecaze <Celeste.Bonnecaze@LA.GOV>

Sent: Monday, February 8, 2021 2:36 PM

To: Carey Dicharry <Carey.Dicharry@LA.GOV>

Subject: Hero Lands vs. Chevron 025-010-006 AI 224694

Comment: Based on review of research, dioxins/furans are unlikely to be associated with E&P activities. They are generally by-products of industrial processes, such as smelting, incomplete incineration or combustion, bleaching paper pulp, and pesticide/herbicide manufacturing. They are however ubiquitous in the environment, and can be deposited onto soils from atmospheric fallout and/or by surface water. Risk-based standards are used to evaluate concentrations of dioxins/furans in soils. It appears the highest concentrations of dioxins/furans were indicated at BC-8R (4-6') (above non-industrial & industrial RS) and at BC-16R (2-4') (above non-industrial RS). According to Chevron's figures 105 and 106, soil excavation is proposed in these areas for other constituents of concern. The LDEQ-RD recommends no additional action to address the detected concentrations of dioxins/furans in soils.