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ENVIRONMENT DEPARTMENT

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GROUND WATER QUALITY BUREAU (GWQB)
DISCHARGE PERMIT RENEWAL
THE MOSAIC COMPANY – MOSAIC POTASH INC.
Issued under 20.6.2 NMAC

Return Receipt Requested
Certified Mail No.

Mine Facility Name:	Mosaic Potash Mine
GWQB Discharge Permit No:	DP-1399
GWQB TEMPO AI Number:	196
Permittee Name/Responsible Party:	Mosaic Potash, Inc.
Mailing Address:	P.O. Box 71 Carlsbad, NM 88220
County:	Eddy County
Mine Facility Contact:	John Anderson: (575) 628-6367
Mine Facility Location:	1361 Potash Mines Road Carlsbad, NM
Permitting Action:	Renewal
Effective Date:	DRAFT – 4/30/2021
Expiration Date:	DRAFT
NMED Permit Contact:	Jonathan Beyeler, (505) 660-8908
E-mail Address	Jonathan.Beyeler@state.nm.us

Rebecca Roose
Division Director
Water Protection Division

Date

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TABLE OF CONTENTS

Part A GENERAL INFORMATION 1
A100 Introduction 1
A101 Applicable Regulations 1
A102 Permit Duration 1
A103 Terms of Permit Issuance 2
Part B FACILITY SPECIFIC INFORMATION 2
B100 History and Facility Description 2
B101 Permitting History 3
B102 Facility Location, Groundwater, and Characteristics of the Discharge 3
B103 Authorized Mine Units 3
B104 Authorized Discharges 5
Part C FACILITY SPECIFIC REQUIREMENTS 6
C100 Salt Stack 6
C101 Clay Settling Pond 6
C102 Brine Pipeline 6
C103 Stormwater Management 7
C104 Flow Meters 7
C105 Monitoring and Reporting 7
C106 Abatement 10
C107 Contingency 11
C108 Closure 11
C109 Financial Assurance 12
Part D GENERAL CONDITIONS 12
D100 Enforcement 12
D101 General Inspection and Entry Requirements 13
D102 General Record Keeping and Reporting Requirements 13
D103 Reporting Requirements for Unauthorized Discharges 14
D104 Monitoring Well Abandonment 14
D105 Modifications and Amendments 15
D106 Compliance with Other Laws 15

LIST OF TABLES AND FIGURES

Table 1 – Monitoring and Reporting Summary for DP-1399 16
Figure 1 – Mine Facilities Map 18
Figure 2 – Salt Stack and Clay Settling Pond Facilities Map 19
Figure 3 – Ground Water and Surface Water Monitoring Map 20

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Part A GENERAL INFORMATION

A100 Introduction

A. The New Mexico Environment Department (NMED) issues this Discharge Permit Renewal, DP-1399 (Discharge Permit), to Mosaic Potash Carlsbad, Inc. (permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978, §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC. NMED is issuing this Discharge Permit to control the discharge of water contaminants from the Mosaic Potash Mine for the protection of groundwater and those segments of surface water that are gaining because of groundwater inflow, for present and potential future use as domestic and agricultural water supply and other uses, and to protect public health.

B. Pursuant to this Discharge Permit, the permittee is authorized to discharge a maximum of 7,500,000 gallons per day (gpd) of tailings and other fluids from the Mosaic Potash Processing Plant Site (Plant Site) to the Salt Stack. The tailings being discharged consist of granular salt, clay minerals, and brine. The permitted 7,500,000 gpd discharge to the Salt Stack includes tailings, plant wash water, and approximately 29,000 gpd of untreated domestic wastewater. These discharges may move directly or indirectly into groundwater of the State of New Mexico that has an existing concentration of approximately 5800 to 390,000 milligrams per liter (mg/L) of total dissolved solids (TDS) within the meaning of Section 20.6.2.3104 and Subsection A of 20.6.2.3101 NMAC. The discharge may contain water contaminants or toxic pollutants elevated above the standards of Section 20.6.2.3103 NMAC in compliance with the terms and conditions of this Discharge Permit. The discharge effects groundwater that has an existing TDS concentration less than 10,000 mg/L, and segments of the Pecos River that may be gaining from groundwater inflow.

C. The permittee is authorized to discharge water contaminants pursuant to this Discharge Permit, which requires compliance with Part 20.6.2 NMAC (WQCC Regulations) and is enforceable by NMED.

A101 Applicable Regulations

A. The discharge from the facilities regulated pursuant to this Discharge Permit are not subject to any of the exemptions of Section 20.6.2.3105 NMAC.

B. Groundwater quality as observed in monitoring wells required by Section C105 of this Discharge Permit is subject to the criteria of Sections 20.6.2.3101 and 20.6.2.3103 NMAC.

A102 Permit Duration

A. Pursuant to WQA 74-6-5(I) and Subsection H of 20.6.2.3109 NMAC, the term of this Discharge Permit is **five (5) years** from its effective date.

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B. If the permittee submits an application for renewal in accordance with Subsection F of 20.6.2.3106 NMAC at least 120 days before the permit expires, and the permittee is not in violation of the Discharge Permit on the date of its expiration, then the existing permit shall not expire until the application for renewal has been approved or disapproved.

A103 Terms of Permit Issuance

A. Permit Fees – The permittee shall remit a permit fee payment equal to the applicable permit fee listed in 20.6.2.3114 Table 1 NMAC at the time of Discharge Permit approval. [20.6.2.3114.C and 20.6.2.3114.F NMAC]

B. Transfer of Discharge Permit – Prior to the transfer of any ownership, control, or possession of this permitted facility or any portion thereof, the permittee shall notify the proposed transferee in writing of the existence of this Discharge Permit and include a copy of this Discharge Permit with the notice. The permittee shall deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee. [20.6.2.3111 NMAC]

C. Permit Renewal – To renew this Discharge Permit and to meet the provisions found in 20.6.2.3106.F NMAC, the permittee must submit an application and associated fees for renewal, or renewal and modification, at least 120 days prior to the expiration date of this Discharge Permit.

Part B FACILITY SPECIFIC INFORMATION

B100 History and Facility Description

A. The Mosaic Potash Mine is an underground potash mine that produces potash products including fertilizers used for plant growth and products for animal feed. In December 2014 Mosaic began operation of the Kieserite (hydrated magnesium sulfate) Crushing Plant that was built to process low-grade ore. Facilities associated with the mine include approximately 17 miles of underground workings from which potash ore is mechanically extracted then refined at the Plant Site, the Salt Stack consisting of tailings discharged from the Plant Site, the Clay Settling Pond, Laguna Uno and Laguna Grande Brine Management Areas, pipelines, and associated containment dikes. Figure 1 attached to this Discharge Permit shows major facilities at the Mosaic Potash Mine.

B. Tailings from the Plant Site are discharged as a brine slurry onto the Salt Stack where coarse salt and clay settle on the Salt Stack. Brine and residual clay flowing off the Salt Stack is typically discharged to the Clay Settling Pond, or to Laguna Uno during upset conditions. Following discharge to the Clay Settling Pond the brine is then conveyed through a 24-inch diameter high density polyethylene pipeline (Brine Pipeline) to Laguna Grande where the brine is diverted into a series of evaporation cells operated by United Salt and New Mexico

Salt for salt harvesting. Prior to construction of the Clay Settling Pond in 2005, the brine and residual clay was discharged to Laguna Uno where residual clay settled out in the Laguna Uno Clay Settling Area. The brine would flow overland to the Laguna Uno Brine Management Area, and then by subsurface flow to Laguna Grande.

C. The southern toe of the Salt Stack is defined by the Salt Stack Contingency Dike. Construction of the Salt Stack Contingency Dike was completed in 2011. Salt Stack Dike No. 1, located just north of the Salt Stack Contingency Dike was also constructed in 2011 to divert brine flow to the Clay Settling Pond but was breached in 2014 and is no longer utilized or maintained.

D. In 2009, construction of the Southwest Laguna Grande Dike was completed southwest of Laguna Grande in response to an extreme flood event in 2004 that resulted in the Laguna Grande brine pond expanding to the southwest toward the Pecos River.

B101 Permitting History

A. The Discharge Plan for DP-1399 includes application materials submitted to NMED for renewal of DP-1399 dated May 20, 2016, and materials contained in the administrative record prior to issuance of this Discharge Permit. In addition, the Discharge Plan includes information and materials submitted as part of the original Discharge Plan approved on March 15, 2004, renewed on March 15, 2011, and amended on July 14, 2017.

B102 Facility Location, Groundwater, and Characteristics of the Discharge

A. The mine units regulated pursuant to DP-1399 are located approximately 16 miles east of Carlsbad in Eddy County, New Mexico. The Plant Site is located in Sections 1 and 12, T22S, R29E; The Salt Stack is located in Sections 1, 12 and 13, T22S, R29E and Sections 6, 7 and 18, T22S, R30E; The Clay Settling Pond and Laguna Uno are located in Sections 13, 24 and 25, T22S, R29E and Sections 19 and 30, T22S, R30E. The Brine Pipeline is located in Sections 23, 24, 26, and 35, T22S, R29E, and Sections 2 and 3, T23S, R29E; Laguna Grande is located in Sections 3, 4, 5, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, and 28 T23S, R29E, and Sections 13 and 24, T23S, R28E.

B. Depth to groundwater beneath the mine facilities regulated pursuant to this Discharge Permit ranges from 0 to 50 feet. This groundwater had a historical TDS concentration of approximately 3,950 mg/L to approximately 190,000 mg/L.

C. Discharges regulated pursuant to DP-1399 exceed the water quality standards of Section 20.6.2.3103 NMAC for chloride, sulfate, and TDS.

B103 Authorized Mine Units

This Discharge Permit contains requirements associated with the following mine units at the Mosaic Potash Mine, as identified in the Discharge Plan.

A. Plant Site - The Plant Site occupies approximately 120 acres located north of the other mine units described in this Discharge Permit. Major ore processing facilities include ore bins, a crusher, granulation plant, sizing screens, wash screens, a thickener, dryers, and a belt filter. Support facilities include offices, storage and loading facilities, maintenance shops, a warehouse, and a laboratory. The primary product produced at the Plant Site is a fertilizer known as K-Mag (potassium, magnesium, sulfate).

B. Tailings Management Area - The Tailings Management Area includes the Salt Stack, the Clay Settling Pond, the Brine Pipeline, the Laguna Grande and Laguna Uno Brine Management Areas, and associated containment dikes.

1. Salt Stack - The Salt Stack currently covers an area of approximately 1,000 acres as shown on Figure 2. Tailings that are deposited on the Salt Stack originate as two separate streams from the Plant Site. The first stream originates at the tailings wash screen and is primarily comprised of coarse salt tailings. The second stream originates at the thickener underflow pump and is comprised of fine salt tailings and insoluble fine particles (mostly clay). The two tailing streams are then combined with makeup brine and discharged to the Salt Stack where coarse salt and clay settle on the Salt Stack. The makeup brine consists of a combination of fresh water pumped from offsite production wells and salts from the mining operation. Brine and residual clay flowing off the Salt Stack is discharged to the Clay Settling Pond except during upset conditions when the brine and residual clay is discharged to Laguna Uno. Upset conditions may include operational conditions that prohibit discharge into and from the Clay Settling Pond, and during times of preapproved maintenance as necessary. Prior authorization from NMED to discharge to Laguna Uno is required as stated in C101.A of this Discharge Permit.

   Deposition and growth of the Salt Stack is managed with a series of internal dikes. The Salt Stack Contingency Dike limits the expansion of the Salt Stack and diverts the brine flowing off the Salt Stack to an open channel decant structure from which the brine can be directed to the Clay Settling Pond or, during upset conditions to Laguna Uno.

2. Clay Settling Pond - The Clay Settling Pond currently covers an area of approximately 150 acres. The eastern and southern extents of the Clay Settling Pond are defined by the Clay Settling Pond Dike. Some of the clay particles settle out of the brine in the Clay Settling Pond and the partially clarified brine is then decanted into the 24-inch Brine Pipeline.

   On February 6, 2019 the State of New Mexico Office of the State Engineer approved an application for alteration of the Clay Settling Pond Dike. The alterations include raising the height of the dike by approximately five feet to increase the capacity of the Clay Settling Pond.

3. Brine Pipeline – The Brine Pipeline conveys partially clarified brine from the Clay Settling Pond by gravity approximately six miles south to the Laguna Grande Brine Management Area. The maximum design flow capacity of the pipeline is 4,880 gallons per minute.

4. Laguna Uno Brine Management Area - Laguna Uno is an approximately 1,000-acre natural

playa located south of the Salt Stack. Discharge to Laguna Uno is prohibited except during upset conditions with NMED approval. Several dikes have been constructed on the east margin of the Salt Stack to prevent stormwater originating on the Salt Stack from flowing east into natural drainages and toward Laguna Uno.

5. Laguna Grande Brine Management Area - Laguna Grande is a natural playa lake that covers an area of approximately 4,500 acres. The northeast portion of Laguna Grande includes the Laguna Grande Brine Management Area, also identified as Pond 4, which was created by construction of the Pond 4 Dike (refer to Figure 1). The southwest portion of Laguna Grande includes several salt harvesting ponds divided by internal dikes described as Ponds 1, 1A, 2A, 2B, 3A and 3B. The Southwest Laguna Grande Dike is constructed between the salt producer evaporation ponds and the Pecos River. The purpose of the Southwest Laguna Grande Dike is to prevent surface flows from Laguna Grande from reaching the Pecos River.

C. Other Ancillary Facilities and Structures - In addition to the major mine units, there are several support facilities and structures dispersed across the mine. These include water and gas lines, hazardous waste storage areas, haul and access roads, rail sidings, borrow pits, mine shafts and headframes.

B104 Authorized Discharges

The permittee is authorized to discharge water contaminants from the following mine units in accordance with all applicable system design and operational constraints as described in this Discharge Permit and the Discharge Plan.

A. The permittee is authorized to discharge up to 7,500,000 gallons per day (gpd) of tailings and other fluids from the Plant Site to the Salt Stack. The tailing slurry discharge includes tailings, plant wash water, and approximately 29,000 gpd of untreated domestic wastewater from septic tanks.

B. The permittee is authorized to discharge brine from the Salt Stack to the Clay Settling Pond through the concrete open channel weir constructed through the Salt Stack Contingency Dike. Brine decanted from the Salt Stack may be diverted to Laguna Uno only under upset conditions with prior approval from NMED.

C. The permittee is authorized to discharge brine from the Clay Settling Pond via the Brine Pipeline to the Laguna Grande Brine Management Area.

D. This Discharge Permit authorizes only those discharges specified herein. Any unauthorized discharges such as spills or leaks must be reported to NMED and remediated as required by Section 20.6.2.1203 NMAC and any additional requirements listed in this Discharge Permit.

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Part C FACILITY SPECIFIC REQUIREMENTS

The permittee shall conduct the requirements set forth in accordance with the WQCC Regulations of Subsection C of 20.6.2.3106 NMAC and Section 20.6.2.3107 NMAC to ensure compliance with 20.6.2 NMAC.

C100 Salt Stack

A. The Salt Stack shall not exceed the land surface area shown in Figure 2 attached to this Discharge Permit. The permittee may only expand the land surface area of the Salt Stack beyond what is shown in Figure 2 for the purpose of facility closure pursuant to the NMED-approved closure plan or through an NMED-approved permit amendment or modification.

B. External dikes shall be maintained around the perimeter of the Salt Stack as needed to divert impacted stormwater runoff from the Salt Stack to the Clay Settling Pond and to divert clean stormwater away from the Salt Stack.

C101 Clay Settling Pond

A. The permittee shall notify NMED and request approval prior to discharge to Laguna Uno during upset conditions. The request for approval shall include a description of the basis for the proposed discharge to Laguna Uno, and an estimate of the time frame for discharge to Laguna Uno before resumption of normal operation of the clay settling pond.

B. The Clay Settling Pond shall not exceed the land surface area shown in Figure 2 attached to this Discharge Permit. The decant structure must be operated to ensure water levels are maintained low enough to prevent overtopping during storm events.

C. Within 60 days of the effective date of this Discharge Permit (by DATE) the permittee shall provide to NMED an as-built construction report for the Clay Settling Pond Dike raise and all associated work that includes detailed as-built plans, specifications, description of proper operation with respect to operational water levels and storm inputs, an as-built topographic map of the facility and surrounding area that includes the stormwater diversion channel, decant structure, Laguna Uno diversion channel, and construction photographs if available.

C102 Brine Pipeline

A. The high-density polyethylene (HDPE) Brine Pipeline shall be operated and maintained as described in the *Engineering Design Report* dated October 2009 and subsequent design changes shown in approved plans dated March 8, 2018.

B. The permittee shall visually inspect all HDPE pipeline segments to Laguna Grande on a monthly basis for evidence of leaks. The permittee will maintain a log of these monthly visual inspections for five years. The visual inspection log must include the date of inspection, name

of person completing the inspection and summary of findings. In the event of an unauthorized discharge discovered during a visual inspection, the permittee must report the discharge in accordance with Condition D103.

C103 Stormwater Management

A. Within 120 days of submittal of the final Hydrologic Model required by the New Mexico Office of the State Engineer, the permittee shall submit to NMED for approval a comprehensive stormwater management plan that provides details of how stormwater management structures are sized and maintained during typical precipitation events and in the event of extreme rainfall events. The stormwater management plan shall be updated annually. Annual updates shall be submitted to NMED for approval on July 31 of each year following approval of the initial stormwater management plan.

B. The permittee shall inspect all dikes, conveyance channels, and the Clay Settling Pond on a quarterly basis and as soon as practicable after precipitation events exceeding one inch in 24 hours for the following conditions: evidence of damage, indications of potential breaching of dikes, excessive sediment buildup, excessive erosion, or stormwater accumulation that exceed design capacity or intended function of the facility. The permittee will maintain a log of these quarterly and post-precipitation event inspections for five years. The inspection log must include the date of inspection, name of person completing the inspection and summary of findings related to each of the site features and conditions listed in this paragraph. In the event of an unauthorized discharge discovered during one of these quarterly inspections, the permittee must report the discharge in accordance with Condition D103.

C104 Flow Meters

A. Within 30 days of the effective date of this Discharge Permit (by DATE) the permittee shall submit a proposal to install a flow meter to measure the daily volume of tailing discharge to the Salt Stack.

C105 Monitoring and Reporting

A. The permittee shall collect water samples quarterly from monitoring wells LG-1, LG-2, LG-5, LG-23, LG-25, LG-26, LG-28, LG-29, LG-30, LG-31, LG-32, LG-33, LG-34, LG-35, P-West, P-Central, and P-East, all new wells and piezometers, and analyze for dissolved concentrations of the parameters listed in Condition C105.G.1 and C105.G.2. The permittee shall also measure the depth to the water table and elevation of the water table above mean sea level (amsl). Analytical results and depth to the water table measurements shall be reported as required in Condition C105.H. Table 1 attached to this Discharge Permit provides a summary of monitoring and reporting requirements.

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1. For monitoring wells without data loggers, the permittee shall record the depth to the water table and elevation above mean sea level to the nearest hundredth of a foot (.01) during quarterly sampling.

2. For monitoring wells with data loggers, daily groundwater elevation shall be plotted on hydrographs. NMED may request the permittee provide additional hydrographs that show hourly readings for periods of time during and after unusually high rainfall events.

B. The permittee shall sample quarterly the brine being discharged from the HDPE Brine Pipeline to Laguna Grande. Brine shall be analyzed for dissolved and total concentrations of the analytes listed in Conditions C105.G.2 and C105.G.3. Field parameters are not required to be collected. Analytical results shall be reported as required in Condition C105.H. Flows from the HDPE Brine Pipeline shall be measured using a weir totalizer and reported monthly as required in Condition C105.H.

C. The permittee shall measure the discharge volume to the Salt Stack. Meter readings shall be recorded at intervals no less than once per-week and discharge volumes shall be reported in the semi-annual monitoring reports required in Condition C105.I.

D. The permittee shall collect surface water samples quarterly from Pecos River Sampling Locations 1, 2, 3, and 4 and analyze for parameters listed in Conditions C105.H.1 and C105.H.2. Analytical results shall be reported as required in Condition C105.I.

E. The permittee shall collect staff gauge readings quarterly from Pecos River Staff Gauges 1, 2, 3, and 4, and Laguna Grande Staff Gauges 1, 2, 3, and the Southwest Laguna Grande Staff gauge. Results shall be reported as required in Condition C105.H.

F. Unless otherwise approved in writing by NMED, the permittee shall conduct sampling and analysis in accordance with the most recent edition of the following documents [Subsection B of 20.6.2.3107 NMAC]:

1. American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18th, 19th or current)

2. U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste

3. U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey

4. American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water

5. U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition

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6. Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations

7. Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy

8. Brine monitoring shall be conducted according to test procedures approved under Title 40 CFR Part 136.

G. The permittee shall analyze samples of groundwater, Pecos River water, and brine quarterly for the parameters listed below and as specified in C105.A, C105.B, and C105.D.

1. Field Parameters (analysis to be performed in the field): Temperature, pH, and specific conductance.

2. Laboratory Analysis: TDS, boron, sodium, calcium, magnesium, potassium, chloride, sulfate, alkalinity reported as CaCO3, specific conductance, and pH.

3. Total nitrogen defined as total Kjeldahl nitrogen (TKN), nitrate as nitrogen (NO_3-N), and fecal coliform or E. coli bacteria.

H. The permittee shall submit monitoring reports to NMED semi-annually that contain all quarterly monitoring data and information collected pursuant to the requirements of this Discharge Permit and applicable requirements of Section 20.6.2.3107 NMAC. Semi-annual reports are due to NMED by January 31 and July 31 of each year.

1. Monitoring reports shall include, but not be limited to, a summary of all activities related to the discharges and monitoring conducted during preceding six months. Required information includes discharges reported as required by Section 20.6.2.1203 NMAC, operational failures, discharge volumes, maintenance, repairs, monitoring well and piezometer installation and abandonment, facility construction, timeseries plots of water quality for the period of record for individual wells and constituents, water level trends, groundwater elevation contour maps, transducer data, precipitation data, river stage, and water quality data.

2. Monitoring report format shall include a single table in a paper and electronic format (EXCEL spreadsheet) of water quality data with only those constituents analyzed and water levels measured during a single event shown in columns. Tabulated electrical conductivity shall include the measured field values and corrected values to 25 degrees Celsius. Monitoring sites shall be shown in rows. Any constituent not analyzed for a particular site shall be shown as “NA”, any site not sampled shall be shown as “NS” with an associated reason, and any site not measured for water levels shall be shown as “NM” with an associated reason.

3. Electronic copies of laboratory analyses shall be included with the monitoring reports.

I. Changes to monitoring and reporting requirements may require amendment or modification of this Discharge Permit as required by the Secretary.

J. The permittee shall submit to NMED groundwater elevation contour map(s) on a semi-annual basis. The groundwater elevation contour map(s) shall be of an appropriate scale to show groundwater elevation contours for the area within the monitoring well network. The map shall include land surface topographic contours with appropriate contour intervals and shall include locations of the monitoring wells that the groundwater data is based on, and Pecos River staff gauge height data.

K. The permittee shall submit a report of repaired or replaced flow meters in the semi-annual monitoring reports that include a description of any flow meter malfunctions with a statement verifying the repair and description of calibration of the flow meter.

L. The *Mosaic DP-1399 Monitoring Network Improvements Completion Report* dated January 18, 2021 specifies installation of a fourth Pecos River staff gauge as shown on Figure 3. The permittee shall complete installation of Pecos River Staff Gauge 4 within 60 days of the effective date of this Discharge Permit (by DATE). Within 30 days of installation of Pecos River Staff Gauge 4, the permittee shall submit to NMED a completion report that includes photographs of all staff gauges and an updated map showing the location of all components of the monitoring network.

M. The permittee shall submit to NMED semi-annually information describing intensity (i.e., inches per hour) and duration (i.e., hours) of measurable precipitation events, and daily totalized rainfall measurements from all Mosaic meteorological stations.

N. A document issued by the Bureau of Land Management titled *Nash Draw Shorebird Habitat Evaluation-Document ID 4847-6181-3020.*2 (August 20, 2014) identifies high-quality shorebird habitats along the east side of Laguna Uno, at the north end of Laguna Grande and along the east side of Laguna Quatro. Within 45 days of the effective date of this Discharge Permit (by DATE), the permittee shall submit to NMED for approval a plan to monitor the surface water quality in shorebird habitats that may be impacted by Mosaic's operations.

C106 Abatement

A. Pursuant to Sections 20.6.2.4104 and 20.6.2.4106 NMAC, the permittee shall submit to NMED for approval within 60 days after the effective date of this Discharge Permit (by DATE) a Stage 1 Abatement Plan Proposal. The Stage 1 Abatement Plan Proposal shall be designed to define site conditions as outlined in Subsection 20.6.2.4106.C NMAC, including a proposal to characterize the hydrogeologic conditions between Laguna Grande and the Pecos River, hydrogeologic conditions west of the Pecos River, as necessary, to characterize the connection between the Pecos River and groundwater impacted by the permittee's operations, and define the extent of impacts to groundwater and to Pecos River surface water from discharges from the Mosaic Potash Mine. In addition to characterizing site conditions

required by Subsection 20.6.2.4106.C NMAC, the following shall also be included as components of the Stage 1 Abatement Plan Proposal.

1. A workplan for a comprehensive characterization of the waste stream discharged from the Plant Site to the Salt Stack and Laguna Grande. The waste stream characterization shall include analysis for, but not be limited to bromine, manganese, selenium, and the analytes listed in C105.G.2.

2. A workplan to evaluate the effect of the discharge of suspended clay particles to the long-term storage capacity of the Laguna Grande Brine Management Area and shorebird habitats, and the relationship between salt-producer operations and impacts to groundwater and the Pecos River.

3. A summary of existing information collected by previous groundwater investigations and groundwater monitoring, including information gained from the focused study to evaluate the hydrologic conditions and potential sources of contamination observed in monitoring well LG-2 (as required by NMED in a letter dated May 17, 2021).

4. A data gap analysis to guide additional groundwater and surface water investigations.

C107 Contingency

A. Groundwater Exceedances

1. In the event that a groundwater quality standard identified in Section 20.6.2.3103 NMAC is exceeded in groundwater as a result of this discharge during the term of this Discharge Permit, upon closure of the facility or during the implementation of post-closure requirements, the permittee shall submit to NMED a Corrective Action Plan that proposes, at a minimum, source control measures and an implementation schedule. The Plan shall be enacted as approved by NMED. The permittee may be required to abate water pollution consistent with the requirements and provisions of Section 20.6.2.4101, Section 20.6.2.4103, Subsections C and E of 20.6.2.4106, Section 20.6.2.4107, Section 20.6.2.4108 and Section 20.6.2.4112 NMAC.

C108 Closure

A. Closure of the Mosaic Potash Mine shall be in accordance with the closure plan approved by NMED on November 7, 2019.

1. Monitoring and reporting as described in C103.B and C105 and in the approved closure plan shall continue through closure and post-closure periods.

C109 Financial Assurance

A. NMED approved a final financial assurance cost estimate on May 19, 2020 and currently holds financial assurance in the amount of $82,067,076. The permittee shall maintain financial assurance in an amount sufficient to cover the cost of a third party to implement the approved closure plan. The financial assurance shall ensure that funds will be available to implement the closure plan if at any time the permittee is unable, unwilling, or otherwise fails to implement closure of the facility. [20.6.2.3107A(11) NMAC]

Part D GENERAL CONDITIONS

General conditions for Discharge Permits issued by the Ground Water Quality Bureau pursuant to 20.6.2 NMAC are listed below.

D100 Enforcement

A. Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject the permittee to a civil enforcement action pursuant to WQA 74-6-10(A) and (B). Such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to the NMSA 1978, Section 74-6-10(C) and 74-6-10.1, civil penalties of up to $15,000 per day of noncompliance may be assessed for each violation of the NMSA 1978, Section 74-6-5, WCC Regulations, or this Discharge Permit, and civil penalties of up to $10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the permittee waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. The permittee does not waive any argument as to the weight such evidence should be given. [74-6-10 WQA, 74-6-10.1 WQA]

B. Pursuant to NMSA 1978, Section 74-6-10.2(A-F), criminal penalties may be assessed for any person who knowingly violates or knowingly causes or allows another person to:

1. Make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the WQA;

2. Falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or

3. Fail to monitor, sample or report as required by a permit issued pursuant to a state or

federal law or regulation.

D101 General Inspection and Entry Requirements

A. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107 NMAC, 74-6-9(B) & (E) WQA]

B. The permittee shall allow the Secretary or an authorized representative, upon the presentation of credentials to [20.6.2.3107.D NMAC, 74-6-9(B) & (E) WQA]:

1. Enter at regular business hours or at other reasonable times upon the permittee's premises or other location where records must be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.

2. Inspect and copy, during regular business hours or at other reasonable times, any records required to be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.

3. Inspect, at regular business hours or at other reasonable times, any facility, equipment (including monitoring and control equipment or treatment works), practices or operations regulated or required under this Discharge Permit, or under any federal or WQCC regulation.

4. Sample or monitor, at reasonable times for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the WQA, any effluent, water contaminant, or receiving water at any location before or after discharge.

D102 General Record Keeping and Reporting Requirements

A. The permittee shall retain written records at the mine facility of all data and information on monitoring of groundwater, surface water, seepage, and meteorological conditions pursuant to this Discharge Permit including the following:

1. The dates, exact location and times of sampling or field measurements;

2. The name and job title of the person who performed each sample collection or field measurement;

3. The date of the analysis of each sample;

4. The name and address of the laboratory and the name and title of the person that performed the analysis of each sample;

5. The analytical technique or method used to analyze each sample or take each field measurement;

6. The results of each analysis or field measurement, including the raw data;

7. A description of the quality assurance and quality control procedures used.

B. The permittee shall furnish to NMED, within a reasonable time, any documents or other information that NMED requests to determine whether cause exists for modifying, terminating and/or renewing this Discharge Permit or to determine compliance with this Discharge Permit. The permittee shall also furnish to NMED, upon request, copies of documents required to be kept by this Discharge Permit. [20.6.2.3107.D NMAC, 74-6-9 (B) & (E) WQA]

D103 Reporting Requirements for Unauthorized Discharges

A. In the event of a spill or release that is not authorized under this Discharge Permit, the permittee shall initiate the notification and corrective actions as required in 20.6.2.1203 NMAC. The permittee shall take immediate corrective action to contain and remove or mitigate any damage caused by the discharge. Within 24 hours after discovery of the discharge, the permittee shall verbally notify NMED and provide the information required by Paragraph (1) of Subsection A of 20.6.2.1203 NMAC. Within 7 days of discovering the discharge reportable under 20.6.2.1203 NMAC, the permittee shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. The permittee shall submit a corrective action report within 15 days after discovery of the discharge. [20.6.2.1203 NMAC]

B. As part of the 24-hour spill notification requirements, the permittee shall submit a figure to NMED that clearly displays the location (or locations) of the spill and identifies nearby mine units by the end of the next business day.

D104 Monitoring Well Abandonment

A. The permittee shall submit a written request for NMED approval to amend or modify this Discharge Permit at least 30 days prior to the anticipated destruction or removal of any monitoring wells required by this Discharge Permit. After the permittee receives NMED approval, monitoring well plugging and abandonment shall be completed in accordance with the *Groundwater Discharge Permit Monitoring Well Construction and Abandonment Conditions,* Revision 1.1, March 2011, or according to regulations issued by the Office of the State Engineer in 19.27.7 NMAC, unless an alternate method is approved by NMED. [20.6.2.3107 NMAC]

B. The request required in D104.A shall include the following information:

1. A scaled map showing the location of the monitoring well(s) and the mine units it is intended to monitor;

2. The purpose for plugging and abandoning the monitoring well(s);

3. Details, if available, on the monitoring well(s) including depth-to-water elevation, top-of-casing elevation, construction and lithologic logs;

4. Recent groundwater chemistry results from the monitoring well(s); and

5. For any proposed replacement monitoring well(s), the same details of the proposed replacement well(s) as provided in D104.B.1, D104.B.3, and D104.B.4.

D105 Modifications and Amendments

A. The permittee shall notify and obtain approval from NMED of a proposed change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated, or discharged by the facility, prior to implementing such changes. Such changes may require modification or an amendment to this Discharge Permit. [20.6.2.3107.C NMAC, 20.6.2.3109.E NMAC]

B. Pursuant to Subsection E of 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated, or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of groundwater quality and that more stringent requirements are needed to protect groundwater quality.

D106 Compliance with Other Laws

A. Nothing in this Discharge Permit shall be construed in any way as relieving the permittee of the obligation to comply with all applicable federal, state, and local laws, regulations, permits, or orders. [20.6.2 NMAC]

draft

Table 1 – Monitoring and Reporting Summary for DP-1399

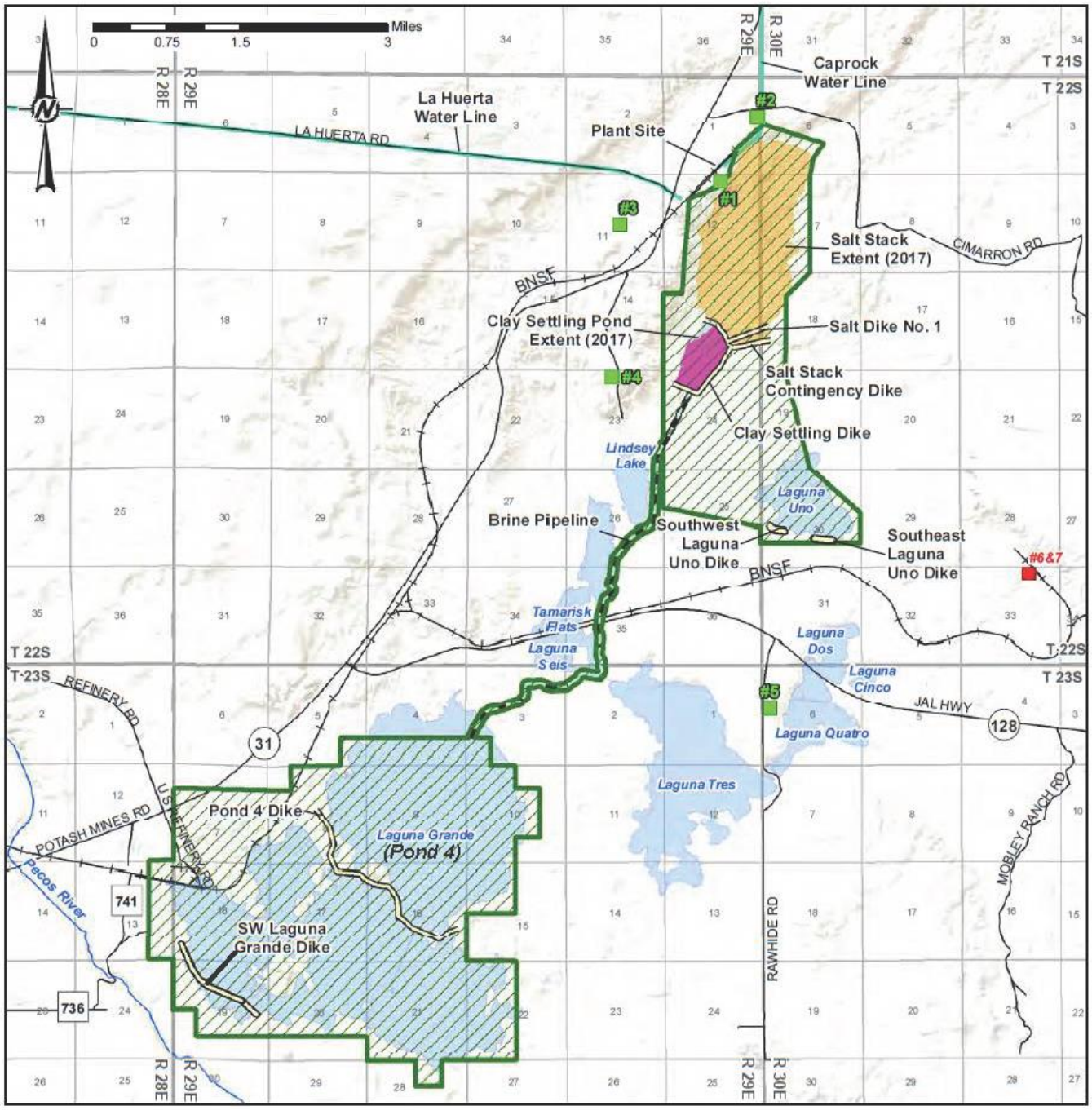
Monitoring Report Schedule of Submittal						
1	January 1 - June 30 (Q1 and Q2 sampling quarters) – Semi-annual report due by July 31 of each year.					
2	July 1 - December 31 (Q3 and Q4 sampling quarters) – Semi-annual report due by January 31 of each year					
Reporting Summary						
Annual Reporting Frequency	**Number of Sites**	**Description**				
2	1	Groundwater potentiometric surface elevation map				
2	NA	Monitoring Reports				
Monitoring Schedule						
Monitoring Well Network						
		Sampling				**Notes**
Sample ID		**Q1**	**Q2**	**Q3**	**Q4**	
LG-1		ABC	ABC	ABC	ABC	
LG-2		ABC	ABC	ABC	ABC	
LG-5		ABC	ABC	ABC	ABC	
LG-23		ABC	ABC	ABC	ABC	
LG-25		ABC	ABC	ABC	ABC	
LG-26		ABC	ABC	ABC	ABC	
LG-28		ABC	ABC	ABC	ABC	
LG-29		ABC	ABC	ABC	ABC	
LG-30		ABC	ABC	ABC	ABC	
LG-31		ABC	ABC	ABC	ABC	
LG-32		ABC	ABC	ABC	ABC	
LG-33		ABC	ABC	ABC	ABC	
LG-34		ABC	ABC	ABC	ABC	
LG-35		ABC	ABC	ABC	ABC	
Laguna Grande Sampling Locations						
24" HDPE brine pipeline		ABD	ABD	ABD	ABD	
Laguna Grande Staff Gauge #1, 2, 3		W	W	W	W	
Southwest Laguna Grande Dike Staff Gauge		W	W	W	W	
Pecos River Sampling Locations						
River-1		AB	AB	AB	AB	
River-2		AB	AB	AB	AB	
River-3		AB	AB	AB	AB	
River-4		AB	AB	AB	AB	
Pecos River Staff Gauge #1, 2, 3, 4		W	W	W	W	
Salt Stack Piezometers						
P-East		ABC	ABC	ABC	ABC	
P-Central		ABC	ABC	ABC	ABC	
P-West		ABC	ABC	ABC	ABC	

Draft

<table>
<tr><td colspan="2">Sampling Analytical Suites:
A = Field Measurements: Temperature, pH, specific conductance,
B = Laboratory Analyses: TDS, Na, Ca, Mg, K, Cl, SO_4, B, Mn, Se, alkalinity (ppm as $CaCO_3$), specific conductivity, and pH
C = Depth to water measurements, top of well casing, and water elevation to the nearest 0.01 foot
D = fecal coliform or E. coli bacteria, total nitrogen
W = Stage height/water depth to nearest 0.1 foot</td></tr>
<tr><td colspan="2">Explanation of Abbreviations and Symbols</td></tr>
<tr><td>Sampling Quarters:
Q1 = Jan – Mar
Q2 = Apr – Jun
Q3 = July – Sep
Q4 = Oct – Dec</td><td>Sampling Analytes Suite B:
TDS = total dissolved solids
Na = Sodium
Ca = Calcium
Mg = Magnesium
K = Potassium
Cl- = Chloride
S04 = Sulfate
B = Boron
Mn = Manganese
Se = Selenium
Alkalinity = CaCO3 alkalinity

Sampling Analytes Suite D:
Total nitrogen = total Kjeldahl nitrogen plus nitrate as nitrogen (TKN + NO3-N)
fecal coliform or E. coli bacteria</td></tr>
</table>

draft



LEGEND

- ACTIVE MINE SHAFT
- DECOMMISSIONED MINE SHAFT
- DIKE
- BRINE PIPELINE
- RAILROAD
- ROADWAY
- WATER LINE
- SALT STACK EXTENT (2017)
- CLAY SETTLING POND EXTENT (2017)
- TAILINGS MANAGEMENT AREA
- SECTION BOUNDARY
- TOWNSHIP/RANGE BOUNDARY

REFERENCES

1. BASEMAP: SOURCES: ESRI, USGS, NOAA

CLIENT
MOSAIC POTASH CARLSBAD INC.

PROJECT
MOSAIC POTASH MINE
DP-1399 RENEWAL

TITLE
MINE FACILITIES

CONSULTANT
GOLDER

YYYY-MM-DD	2018-05-24
DESIGNED	KJC
PREPARED	KJC
REVIEWED	EMC
APPROVED	TS

PROJECT NO.
1894209

FIGURE 1

THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
25mm
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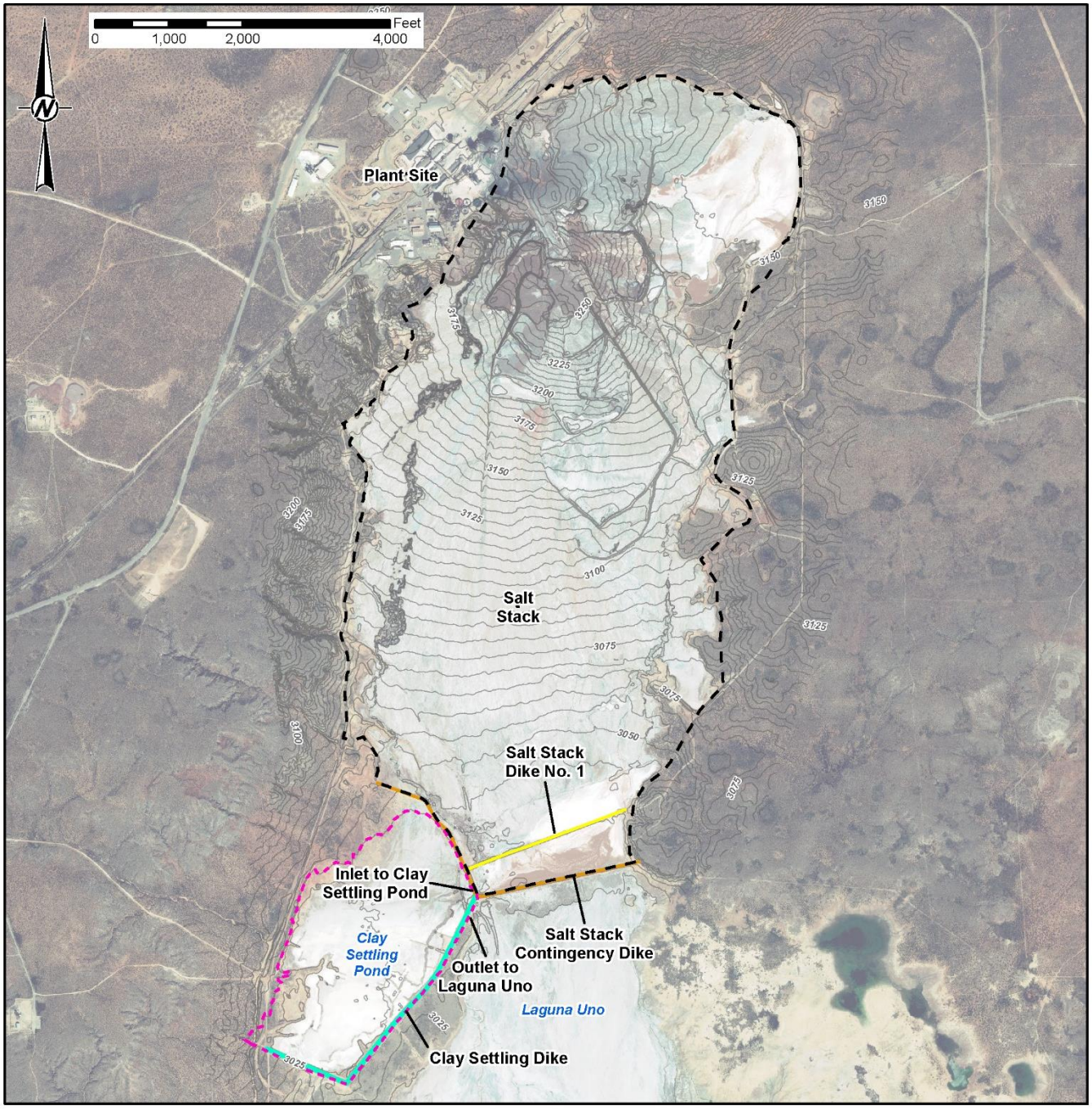

LEGEND

- 2017 TOPOGRAPHY
- AUTHORIZED FOOTPRINT OF SALT STACK
- SALT STACK CONTINGENCY DIKE
- SALT STACK DIKE NO. 1
- CLAY SETTLING DIKE
- CLAY SETTLING POND EXTENT

REFERENCES

1. AERIAL IMAGERY AND TOPOGRAPHY: PHOTOSAT INFORMATION LTD, MARCH 2017.

CLIENT
MOSAIC POTASH CARLSBAD INC.

PROJECT
MOSAIC POTASH MINE
DP-1399 RENEWAL

TITLE
SALT STACK AND CLAY SETTLING POND LAYOUT

CONSULTANT
GOLDER

YYYY-MM-DD	2019-04-17
DESIGNED	KJC
PREPARED	KJC
REVIEWED	EMC
APPROVED	TS

PROJECT NO.
19119474

FIGURE 2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
25mm
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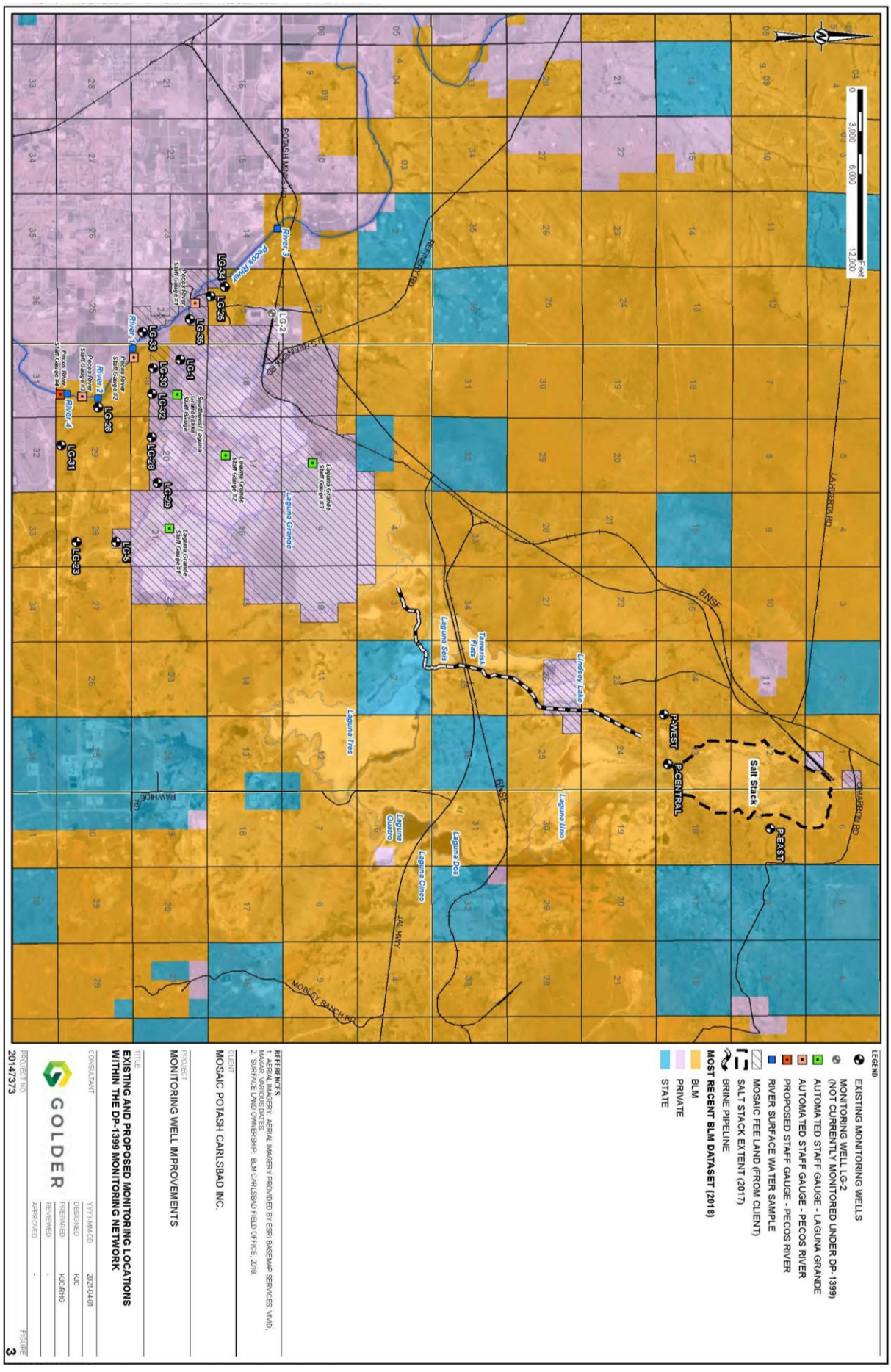
Feet
0
3,000
6,000
12,000
LA HUERTA RD
CIMARRON RD
BNSF
Salt Stack
P-EAST
P-WEST
P-CENTRAL
Lindsey Lake
Laguna Uno
Tamarisk Flats
Laguna Seis
Laguna Tres
Laguna Cinco
Laguna Cuatro
Laguna Dos
JAL HWY
MOBLEY RANCH RD
RAWHIDE RD
POTASH MINES RD
SHEEPNECK RD
Pecos River
River 3
River 1
River 2
River 4
LG-2
LG-34
LG-25
LG-35
LG-1
LG-33
LG-30
LG-32
LG-28
LG-29
LG-5
LG-26
LG-51
LG-23
Southwest Laguna Grande Staff Gauge
Laguna Grande Staff Gauge #1
Laguna Grande Staff Gauge #2
Laguna Grande Staff Gauge #3
Pecos River Staff Gauge #1
Pecos River Staff Gauge #2
Pecos River Staff Gauge #3
Pecos River Staff Gauge #4
LEGEND
EXISTING MONITORING WELLS
MONITORING WELL LG-2 (NOT CURRENTLY MONITORED UNDER DP-1399)
AUTOMATED STAFF GAUGE - LAGUNA GRANDE
AUTOMATED STAFF GAUGE - PECOS RIVER
PROPOSED STAFF GAUGE - PECOS RIVER
RIVER SURFACE WATER SAMPLE
MOSAIC FEE LAND (FROM CLIENT)
SALT STACK EXTENT (2017)
BRINE PIPELINE
MOST RECENT BLM DATASET (2018)
BLM
PRIVATE
STATE
REFERENCES
1. BASEMAP IMAGERY: AERIAL IMAGERY PROVIDED BY ESRI BASEMAP SERVICES. VINO, MAVAR, VARIOUS DATES
2. SURFACE LAND OWNERSHIP: BLM CARLSBAD FIELD OFFICE, 2018
CLIENT
MOSAIC POTASH CARLSBAD INC.
PROJECT
MONITORING WELL IMPROVEMENTS
TITLE
EXISTING AND PROPOSED MONITORING LOCATIONS WITHIN THE DP-1399 MONITORING NETWORK
CONSULTANT
GOLDER
YYYY.MM.DD 2021-04-01
DESIGNED KJC
PREPARED KJC/RHG
REVIEWED -
APPROVED -
PROJECT NO. 20147373
FIGURE 3