



Department of Toxic Substances Control

Matthew Rodriguez
Secretary for
Environmental Protection

Barbara A. Lee, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Edmund G. Brown Jr.
Governor

December 19, 2014

Mr. John H. FitzSimons
Kearney-KPF
Patterson Planning
2515 South Road, 5th Floor
Poughkeepsie, NY 12601

NOTICE OF DEFICIENCY, POST-CLOSURE RENEWAL APPLICATION, FORMER
KEARNEY-KPF FACILITY, STOCKTON, CALIFORNIA, U.S. ENVIRONMENTAL
PROTECTION AGENCY ID. NO. CAD981429715

Dear Mr. FitzSimons:

This Notice of Deficiency (NOD) is in response to the post-closure permit renewal application submitted to the Department of Toxic Substances Control (DTSC) for the former Kearney-KPF facility located in Stockton, California. The application was prepared by DUDEK and Associates, Inc. and is dated June 16, 2014.

This NOD consists of three parts, this letter, a set of comments, and a memorandum submitted by DTSC's Geological Service Unit (GSU). The set of comments is based on the post-closure application checklist included in DTSC's Instructions for Preparing a Post-Closure Permit application, revised January 2002.

The memorandum from GSU focuses on the modification requirements for proposed groundwater monitoring plan, also referenced as the Sampling and Analysis Plan (SAP).

The revised application will include pertinent elements of the first draft post-closure permit application and modifications identified in NOD and GSU memorandum. The final Post-Closure permit for Kearney-KPF will approve both Parts A and B of the post-closure permit application as modified during the application review period.

As presented in the attached memorandum from GSU, DTSC has determined that the groundwater monitoring program for the Kearney-KPF should be extraction and treatment method.

Please revise the Application according to all comments in the NOD. Please submit two copies of the revised Application within 30 days from the date of this letter.

If you have any questions about this letter, please contact me at hkang@dtsc.ca.gov or 916) 255-6522.

Sincerely,



Hai-Yong Kang
Office of Permitting

cc:(via e-mail)

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DUDEK
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Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

General Information

A1 Part A

REQUIREMENT: All applicants must provide the information listed in Title 22 CCR, Section 66270.13 using the Part A application form EPA 8700-23.

Reference: 66270.13

The information submitted satisfies the requirements of this checklist subsection.

The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: The submitted Part A form for the regulated units has not been completely filled out. Please submit a Part A form to reflect the regulated units: 1. the groundwater extraction and treatment unit, and 2. the covered former ponds area. Please submit photographs showing clearly all the existing structures, treatment units listed in the Part A form. However, if Kearney had provided those photographs with the 2004 permit application and there are no changes in the structure, Kearney can submit the photographs from the 2004 application.

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

General Information

A2 Part B Certification

REQUIREMENT: Applications must be accompanied by a certification statement as specified in Title 22 CCR, Section 66270.11(d).

Reference: 66270.11(d)

- The information submitted satisfies the requirements of this checklist subsection.
- The information submitted does not satisfy the requirements of this checklist subsection.
- Not applicable

Comments:

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

General Information

A3 General Description

REQUIREMENT: Brief description of the facility, including the nature of the business and facility Contacts

Reference: 66270.14 (b)(1) and (b)(13), 66264.118(b)(3)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please provide the names of the facility personnel responsible for regulatory compliance. On application page 1, DTSC determined that MNA is not appropriate for the site at this time because of components of MNA remedy have not been met. Please revise this section based on DTSC's Geological Service Unit (GSU) recommendation, GW extraction and treatment. On application page 4, although June 2014 report is still under reviewing by DTSC, Kearney needs to address both the indoor air pathway and leaching to groundwater pathway. Also, Sampling Analysis Plan (SAP) needs to be revised based on DTSC's GSU comments.

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

General Information

A4 Post-closure Notices

REQUIREMENT: Documentation that notices required under Title 22 CCR Section 66264.119
have been filed

Reference: 66264.119

- The information submitted satisfies the requirements of this checklist subsection.
- The information submitted does not satisfy the requirements of this checklist subsection.
- Not applicable

Comments:

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

General Information

A5 Other Federal Laws

REQUIREMENT: Compliance with the requirements of applicable federal laws such as the Wild and Scenic Rivers Act, National Historic Preservation Act of 1966, Endangered Species Act, Coastal Zone Management Act, and the Fish and Wildlife Coordination Act

Reference: 66270.3

- The information submitted satisfies the requirements of this checklist subsection.
- The information submitted does not satisfy the requirements of this checklist subsection.
- Not applicable

Comments:

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Facility Description

B1 Facility Location

REQUIREMENT: Narrative description of items included on the topographical map identified in Section B-2, including a detailed description of the facility location with an area wide map showing roads and surrounding adjacent properties. Also include an identification of the local jurisdiction(s) in which the facility is located.

Reference: 66270.14 (b)(11)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please provide information about Fault around the site. Kearney can be referenced this geological information from 2004 application.

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Facility Description

B2 Topographical Maps

- REQUIREMENT: (a) Topographic map(s) which shows the facility and a distance of 2,000 feet around it, at a scale of 1 inch equal to not more than 200 feet:
- (1) Contours sufficient to show surface water flow around the facility operations
 - (2) Map scale and date
 - (3) 100-year floodplain area
 - (4) Surface waters including intermittent streams
 - (5) Surrounding land uses
 - (6) A wind rose
 - (7) Map orientation
 - (8) Legal boundaries of the hazardous waste management facility site
- (b) Location of the following:
- (1) Access controls
 - (2) Access and internal roads
 - (3) Injection and withdrawal wells (onsite and offsite)
 - (4) Buildings and structures
 - (5) Sewers
 - (6) Flood control or drainage barriers
 - (7) Run-on and run-off control systems
 - (8) Existing hazardous waste management units and solid waste management units
 - (9) The waste management area boundaries
 - (10) The point(s) of compliance
 - (11) Groundwater monitoring well locations

Reference: 66270.14 (b)(18), 66270.14(c)(3)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: The provided topographical map, Figure A-3, cannot satisfy requirement. Please provide topographic map(s) which shows the facility and a distance of 2,000 feet around it, at a scale of 1 inch equal to not more than 200 feet.

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Facility Description

B3 Floodplain

REQUIREMENT: Floodplain requirements

Reference: 66264.18 (b), 66270.14(b)(11)

- The information submitted satisfies the requirements of this checklist subsection.
- The information submitted does not satisfy the requirements of this checklist subsection.
- Not applicable

Comments:

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Closure/Post-closure

C1 Closure / Post-closure Plan

REQUIREMENT: Copy of the approved closure plan, closure report and certification, and post-closure plan

Reference: 66270.14 (b)(13)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Amended 2004 post closure plan is available in Appendix C. Kearney need to continue GW extraction and treatment. Thus, please revise MNA on application page 6 and second paragraph on application page 7. The post-closure plan must explain how the facility will be maintained consistent with the approved closure plan and the closure certification report, including the as-built drawings. The post-closure plan must also explain how the site will be operated during post-closure, including operation of the groundwater extraction and treatment system and the new UV/Oxidation system. The post-closure plan will be used by future DTSC inspectors to determine whether the site is in compliance with the post-closure permit and title 22 regulations. Thus, the plan should be written in a manner to lead the DTSC inspector through all post-closure operation and maintenance activities. The post-closure plan need not include any site activities not directly related to the post-closure operation of the two hazardous waste management units (the Covered Former Ponds Unit and the Groundwater Extraction and Treatment Unit).

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Kearney-National, Inc. Post-closure Permit Renewal Application

Security

D1 Security Requirements

REQUIREMENT: Adequate security and requirement details

Reference: 66264.14, 66270.14(b)(4)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please re-install H₂SO₄ storage tank on the treatment system to avoid violation of permit. Removing any parts from permitted unit is not allowed without permit modification.

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Kearney-National, Inc. Post-closure Permit Renewal Application

Security

D2 Emergency Preparedness

- REQUIREMENT: (a) Emergency equipment
(b) Testing and maintenance of equipment
(c) Water and fire control
(d) Documentation of arrangements with emergency agencies
(e) Equipment and power failure

Reference: 66270.14(a) and (b), 66264.32(c) and (d), 66264.33 66264.37

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please add a contingency plan for emergency situation: emergency equipment , equipment and power failure, etc.

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Kearney-National, Inc. Post-closure Permit Renewal Application

Financial Responsibility

E1 Cost Estimates

REQUIREMENT: Copy of the most recent post-closure cost estimate

Reference: 66270.14 (b)(16)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: The cost estimate must be adjusted annually for inflation pursuant to Title 22 CCR Section 66264. 144(b). The corrective action for this site will remain in GW extraction and treatment. Please revise this section. The cost estimation needs to include decommissioning and disposal cost of the plant and appurtenances, any detail or cost related to the required five year review, and all appropriate tasks and costs with regards to maintenance of the ponds. Also, costs for DTSC oversight/management of the site should the owner/operator prove unwilling or unable to continue operations, costs for land use covenant (LUC) monitoring, inspections or reporting need to be included in the cost estimation.

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Financial Responsibility

E2 Financial Responsibility Mechanisms

REQUIREMENT: Copy of the established financial assurance mechanism for post-closure care of the facility

Reference: 66270.14 (b)(16)

- The information submitted satisfies the requirements of this checklist subsection.
- The information submitted does not satisfy the requirements of this checklist subsection.
- Not applicable

Comments:

Notice of Deficiency

Kearney-National, Inc. Post-closure Permit Renewal Application

Inspection and Maintenance

F1 Closure Structures

- REQUIREMENT: (a) List of wastes
(b) Liner and cap system description
(c) Liner system foundation description
(d) Leachate collection/detection system operation and design (If applicable)
(e) Run-on control system
(f) Run-off control system
(g) Cap maintenance

Reference: 66264.301, 66264.309, 66264.310, 66270.21 (a) and (b)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please provide the following:

- 1) A detailed drawing of closure structure showing the layers of cap.
- 2) A topographic map showing the survey elevations of the existing drainage cover area (more detailed map than Figure A-3).
- 3) A detailed description and drawings of existing drainage structures.

However, if Kearney had provided those drawings with the 2004 permit application and there are no changes in the structure, Kearney can submit the drawings from 2004 application.

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Inspection and Maintenance

F2 Inspection Plan

REQUIREMENT: Inspection Plan which includes the following:

- (a) Inspection schedule
- (b) Inspection description
- (c) Inspection checklist
- (d) Inspection log
- (e) Inspection remedial actions

Reference: 66264.15 (b) and (c), 66264.118(b)(2), 66270.14(b)(5)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please provide plans for all major items. The ultraviolet light / oxidation reactors, the air stripper, the granular activated carbon unit, groundwater collection pumps and piping, and ground surface cover system. The maintenance and inspection schedule must reflect any conditions or other recommendations by the engineer to monitor and maintain drainage cover performance.

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Kearney-National, Inc. Post-closure Permit Renewal Application

Monitoring Requirements

G1 Groundwater Monitoring Plan

REQUIREMENT: See Appendix I Section 6.0.

- (a) Purpose of plan
- (b) Waste management history
- (c) Uppermost aquifer
- (d) Nature and extent of plume
- (e) Analytical parameters
- (f) Concentration limits
- (g) Monitoring program description
- (h) Water Quality Sampling and Analysis Plan
- (i) Statistical Evaluation Plan
- (j) Monitoring System Operation and Maintenance Plan
- (k) Summary of existing environmental monitoring data

Reference: 66270.14(c)(1), 66264.979

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: This section should be revised based on DTSC's GSU recommendations. GW monitoring plan should be focused on extraction and treatment method to prevent migration of the contaminated plume and decrease current contamination level. For detailed comments on section G-1a to G-1i, please see GSU memo attached. Also, WQSAP should be revised accordingly.

Kearney mentioned that waste management history is documented on page 5 of the WQSAP, but DTSC could not find history on page 5 of the WQSAP. Please provide correct information. Also, please provide concentration of all regulated compounds. In application section G-1(h), Kearney said WQSAP is in the Appendix D, but it is located in Appendix E. Please correct this error.

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Monitoring Requirements

G2 Surface Water Monitoring Plan

REQUIREMENT: See Appendix I, Sections 9.0, 10.0, 11.0

- (a) Purpose of plan
- (b) Waste management history
- (c) Surface water features
- (d) Nature and extent of plume
- (e) Analytical parameters
- (f) Concentration limits
- (g) Monitoring program description
- (h) Water Quality Sampling and Analysis Plan
- (i) Statistical Evaluation Plan
- (j) Monitoring System Operation and Maintenance Plan
- (k) Summary of existing environmental monitoring data

Reference: Article 6, 66264.90 - 66264.100, 66264.97(C)

The information submitted satisfies the requirements of this checklist subsection.

The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Surface water monitoring is not required at Kearney-KPF (2002 Notice of Deficient by DTSC). But, Kearney mentioned in the application that plan is on the page 9 of WQSAP. However, DTSC could not find information on page 9 of WQSAP. Please provide correct information or delete wrong information.

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Monitoring Requirements

G3 Vadose Zone Monitoring Plan

REQUIREMENT: See Appendix I, Section 8.0

- (a) Purpose of plan
- (b) Waste management history
- (c) Vadose zone description
- (d) Nature and extent of plume
- (e) Analytical parameters
- (f) Concentration limits
- (g) Monitoring program description
- (h) Vadose Zone Sampling and Analysis Plan
- (i) Statistical Evaluation Plan
- (j) Monitoring System Operation and Maintenance Plan
- (k) Summary of existing environmental monitoring data

Reference: Article 6, 66264.97(d)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Based on finding of the April 2014 soil gas sampling report, Kearney needs to prepare vadose zone monitoring plan. Please prepare vadose zone monitoring plan which address comments in the memorandum, prepared by DTSC's GSU.

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Kearney-National, Inc. Post-closure Permit Renewal Application

Environmental Monitoring & Response Programs for Air, Soil, and Soil-Pore Gas

H Environmental Monitoring & Response Programs for Air, Soil, and Soil-Pore Gas

REQUIREMENT: Demonstrate compliance with Article 17 requirements.

Reference: Article 17, 66264.700 - 66264.708

The information submitted satisfies the requirements of this checklist subsection.

The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please submit plan which address comments in the memorandum prepared by DTSC's GSU.

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Kearney-National, Inc. Post-closure Permit Renewal Application

Air Emission Standards for Process Vents

I Air Emission Standards for Process Vents

REQUIREMENT: Demonstrate compliance with Article 27 (RCRA AA) requirements.

Reference: Article 27, 66264.1030 - 66264.1036

The information submitted satisfies the requirements of this checklist subsection.

The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: This section is not applicable to Kearney (2002 Notice of Deficient by DTSC).

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Air Emission Standards for Equipment Leaks

J Air Emission Standards for Equipment Leaks

REQUIREMENT: Demonstrate compliance with Article 28, (RCRA BB) requirements.

Reference: Article 28, 66264.1050 - 66264.1065

The information submitted satisfies the requirements of this checklist subsection.

The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Based on information shown on 2002 NOD by DTSC, this requirement does not apply to Kearney (The effluent from the UV/oxidation reactors has a concentration of less than 10 percent by weight).

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Kearney-National, Inc. Post-closure Permit Renewal Application

Air Emission Standards for Tanks, Surface Impoundments, and Containers

K Air Emission Standards for Tanks, Surface Impoundments, and Containers

REQUIREMENT: Demonstrate compliance with Article 28.5, (RCRA CC) requirements.

Reference: Article 28.5, 66264.1080 - 66264.1090

The information submitted satisfies the requirements of this checklist subsection.

The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Based on information shown on 2002 NOD by DTSC, this requirement does not apply to Kearney (Since the organic concentrations are below 500 ppm by weight).

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Seismic Requirements

L Seismic Requirements

REQUIREMENT: Demonstrate compliance with seismic standards.

Reference: 66270.14(b)(11)(A) 66264.18(a) 66264.25 66264.228 66264.310

- The information submitted satisfies the requirements of this checklist subsection.
The information submitted does not satisfy the requirements of this checklist subsection.
Not applicable

Comments:

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Corrective Action

M1 Location on Topographic Map

REQUIREMENT: The location of the corrective action unit(s) on the required topographic map.

Reference: 66270.14(d)(1)(A)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: On page 19, Figure A-3 and B-1a are referred as topographical map. However, Figure B-1a is a map of the facility, not a topographical map. Also, Figure A-3 is not enough to show topographical information of the facility. Please provide topographic map(s) which shows the facility and a distance of 2,000 feet around it, at a scale of 1 inch equal to not more than 200 feet.

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Corrective Action

M2 Solid Waste Management Units

REQUIREMENT: Characterization of the Solid Waste Management Unit(s):

- (a) Type of unit
- (b) Location of each existing or closed unit on the topographic map
- (c) General dimensions and structural description including engineering drawings for each unit (if available)
- (d) Dimensions and materials of construction of each unit, if available
- (e) Dates when the unit was in operation
- (f) Description of the wastes placed in the unit
- (g) Quantity or volume of wastes

Reference: 66270.14(d)(1)

The information submitted satisfies the requirements of this checklist subsection.

The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Currently, this section is not applicable. However, it will be reviewed based upon on-going soil vapor extraction pilot test.

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Corrective Action

M3 Release from SWMU

REQUIREMENT: Provide all information available, including releases reported under CERCLA, on whether or not any releases have occurred from any of the solid waste management units at the facility.

- (a) Information on releases must include the following concerning prior or current releases:
 - (1) Date of the release
 - (2) Type of waste or constituent released
 - (3) Quantity or volume released
 - (4) Nature of the release
 - (5) Monitoring and other analytical data available to describe the nature and extent of the release
- (b) If no releases, describe the methodology used to determine that releases from solid waste management units are not present.

Reference: 66270.14(d)(1) and (2)

The information submitted satisfies the requirements of this checklist subsection.

The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments:

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Corrective Action

M4 Public Exposure

REQUIREMENT: Provide information on the potential for the public to be exposed to releases.

At a minimum, this must include:

- (a) Reasonably foreseeable potential releases
- (b) Potential pathways of human exposure
- (c) Potential magnitude and nature of exposure

Reference: 66270.10(j)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please submit information on the potential exposure of public to release which address comments in the recommendations prepared by DTSC's GSU.

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Corrective Action

M5 Corrective Action Program

- REQUIREMENT: (1) Characterization of contamination
(2) Concentration limits
(3) Corrective Action Plan
(4) Monitoring program(s)
(5) Background values
(6) Sampling, analysis and statistical procedures

Reference: 66270.14 (c)(8)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please submit information which addresses comments in the recommendations prepared by DTSC's GSU.

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Potential Redevelopment Information

N Potential Redevelopment Information

REQUIREMENT: Any information or applicable discussion related to the proposed or potential future redevelopment of the site

Reference: 66270.14(b)(19)

- The information submitted satisfies the requirements of this checklist subsection.
- The information submitted does not satisfy the requirements of this checklist subsection.
- Not applicable

Comments:

Notice of Deficiency
Kearney-National, Inc. Post-closure Permit Renewal Application

Additional Information

O Additional Information

REQUIREMENT: Any additional information related to the proposed activity or facility which is requested by DTSC

Reference: 66270.14(b)(19)

The information submitted satisfies the requirements of this checklist subsection.

- The information submitted does not satisfy the requirements of this checklist subsection.

Not applicable

Comments: Please update data on Table B-1(WQPS) in application and Table 1 of the SAP. DTSC recommends updating the WQPSs to use human health risk-based groundwater concentrations protective for a risk of 1×10^{-6} and hazard of 1.0. Also, please provide information which address all other comments prepared by DTSC's GSU .



Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control



Edmund G. Brown Jr.
Governor

Miriam Barcellona Ingenito
Acting Director
8800 Cal Center Drive
Sacramento, California 95826-3200

MEMORANDUM

TO: Hai-Yong Kang, Ph.D.
Hazardous Substances Engineer
Hazardous Waste Management Program

FROM: Lora Kiger Jameson, P.G. *Lora Jameson*
Engineering Geologist, Sacramento Geological Services Unit
Office of Geology, Brownfields and Environmental Restoration Program

INTERNAL REVIEW: Dot Lofstrom, P.G. *Dot Lofstrom*
Chief, Sacramento Geological Services Unit
Office of Geology, Brownfields and Environmental Restoration Program

DATE: November 7, 2014

SUBJECT: GSU REVIEW OF POST-CLOSURE PERMIT RENEWAL APPLICATION
KEARNEY-KPF, STOCKTON, SAN JOAQUIN COUNTY
25035/100082-33/43-HWMP WR: 20025534

DOCUMENT REVIEWED

Part B Application, Post-Closure Permit Renewal Application, Former Kearney-KPF Facility (CAD9814219715). Prepared by Dudek and Associates, Inc. (Dudek). June 2014. (Part B Application)

INTRODUCTION

The Sacramento Geological Services Unit (GSU) of the Department of Toxic Substances Control (DTSC) has reviewed the Part B Application for the former Kearney-KPF facility in Stockton, California (the site). If you have any questions or comments regarding this memorandum, please contact Lora Jameson at (916) 255-6523 or lora.jameson@dtsc.ca.gov.

The current DTSC post-closure permit was issued in 2004 and included corrective action by groundwater extraction and treatment using an ultraviolet oxidation and air stripping to remove volatile organic compounds (VOCs) and 1,4-dioxane from groundwater. The system was shut down in 2012 to evaluate for rebound in groundwater concentrations.

The Part B Application was submitted for renewal of the DTSC post-closure permit. The Part B Application:

- 1) Proposes to change from corrective action by groundwater extraction and treatment to corrective action by monitored natural attenuation (MNA).

- 2) Includes the potential for completion of corrective action and establishment of a detection monitoring program.
- 3) Provides the information necessary for implementing sampling, analysis, operations, and maintenance of the proposed monitoring programs. This information is included in the Part B Application as the following:
 - Appendix E - Water Quality Sampling and Analysis Plan (SAP), which consists of a Field Sampling Plan (FSP) and a Quality Assurance Project Plan (QAPP).
 - Appendix F – Statistical Evaluation Plan (SEP)

GSU COMMENTS AND RECOMMENDATIONS

General Comments on the Part B Application

- 1) Proposal to change groundwater extraction to monitored natural attenuation. GSU commends Kearney-National, Inc. (Kearney) on the significant progress made at reducing concentrations of VOCs and 1,4-dioxane in groundwater. Since VOC contamination was first treated in 1992 and 1,4-dioxane impacts were treated beginning in 2003, concentrations in groundwater have been significantly reduced.

However, despite these advances, monitored natural attenuation is not appropriate for the site at this time because the primary components of a MNA remedy have not been met, as follows:

- a) At the time that the rebound study began in 2012, multiple wells exceeded the concentration limits (CLs) for one or more contaminants. Through the second and third quarters of 2014, several of these wells were exhibiting rebounding concentrations of contaminants, with concentrations several times greater than their respective CLs. In addition, concentrations are also increasing at wells that did not previously contain contaminants at concentrations above their respective CLs. During the third quarter 2014 sampling event, concentrations in several wells were approximately twice the concentrations detected during the previous quarter. In addition, concentrations have not stabilized in multiple wells. Therefore, current groundwater concentrations do not demonstrate a decreasing trend that is clear and meaningful, which is a primary component necessary for a MNA remedy¹.
- b) The plume in the Shallow Zone appears to have migrated outside (east) of the groundwater monitoring network, as demonstrated by the recent increases in TCE concentrations at well KS-1. There are no monitoring wells east of KS-1 to evaluate the lateral extent of the plume. Therefore, the nature and extent of the plume is not fully understood, which is another component of a MNA remedy.

¹ Additional information on MNA can be found in the following:

- US EPA. *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*. April 1999. OSWER Directive 9200.4-17P. <http://www.epa.gov/swerust1/directiv/d9200417.htm>
- Interstate Technology and Regulatory Council (ITRC). *A Decision Flowchart for the Use of Monitored Natural Attenuation and Enhanced Attenuation at Sites with Chlorinated Organic Plumes*. March 2007. http://www.itrcweb.org/Documents/EACODecisionFlowchart_v1.pdf

- c) Given the recent increases in concentrations, the timeframes proposed in the Part B Application to achieve the CLs will not be met. In addition, Kearney has not determined if groundwater concentrations will attenuate to less than CLs within a reasonable time frame. In order for MNA to be an appropriate remedy, CLs should be reached within a reasonable timeframe.
- d) Concentrations are rebounding at point-of-compliance (POC) wells located around the former ponds, as well as at wells not located adjacent to the former ponds, suggesting that the former ponds are not the only source for contamination in groundwater. Soil gas data reported in the April 2014 soil gas report corroborate the possibility of another source east of the former ponds, near the former main factory building (see comment 2 for additional information). Kearney has not evaluated if soil gas concentrations at the site, including but not limited to near the former ponds and the former main factory building, are currently contributing or will contribute to the groundwater plume. This evaluation needs to be conducted as part of the MNA remedy evaluation.
- e) Groundwater in the vicinity of the site is a source of municipal drinking water, and may also be a source of private drinking water. As such, a remedy for MNA needs to include an evaluation that the contaminants detected in groundwater at the site will not reach a drinking water well. In April of 2014, PCE was detected at city well CWS-21 at a concentration of 0.72 µg/L. A confirmation sample/duplicate was subsequently collected later in the month at the production well and contained PCE at 0.66 and 0.63 µg/L.
- f) Kearney has not provided the mechanism(s) for attenuation (biodegradation, dispersion, dilution, sorption, chemical, biological, destruction, etc). The proposal should provide sufficient information regarding the mechanism(s) for attenuation.

Kearney should revise the Part B Application to address the above issues with a specific focus on providing a solution to prevent contaminated groundwater from migrating off site. Continuing groundwater extraction would prevent groundwater contamination from migrating offsite. However, groundwater extraction is a containment measure rather than an active treatment measure, and case studies have shown that groundwater extraction can be required for years unless alternative technologies are implemented.

Therefore, another solution is to implement alternatives that reduce the source(s) contributing to groundwater contamination, with groundwater extraction as an interim measure to prevent contamination from reaching the drinking water wells. Once an alternative remedy reduces concentrations in groundwater to pre-determined criteria, corrective action can transition then to MNA.

In December 2006, Kearney submitted the *Work Plan for Evaluating Remediation Alternatives in the Shallow Groundwater Bearing Zone*, as required by Part V(1)(b) of the 2004 post-closure permit. However, the evaluation of alternatives has not been conducted under a consent agreement or enforcement order as stipulated in the permit. GSU recommends that Kearney conduct the evaluation of alternatives for remediation in the Shallow Zone under a consent agreement or enforcement order, or incorporated into post-closure permit undergoing renewal. In addition, due to the time since the work plan was submitted, additional remediation methods may now be viable alternatives to groundwater extraction and treatment should be considered. This is especially true for 1,4-dioxane, which will not biodegrade and is highly miscible in water.

- 2) Source of soil gas contamination. The April 2014 soil gas report provides unexpected concentrations of soil gas near the former main factory building. The source(s) of PCE, TCE, and 1,1-DCE in soil gas in this area has not been identified and does not fit the current conceptual site model of contaminant nature and extent. Potential causes of the soil gas contamination include but are not limited:
- A release from within the former Main Factor building, which housed silver plating operations since 1951, per the RCRA Facility Assessment (RFA; DHS, 1989). The RFA includes a figure that shows a vapor degreaser and sink located in the southwest corner of the building. Similarly, Section B-1 of the Part B Application references "a former drain in a degreasing room located in the southwest corner of the former Main Factory building..." Note that a 1987 DHS enforcement inspection report shows the silver plating operations within a smaller room in the center of the former Main Factory building, but a drain along the southwest side of the building.
 - Migration of contaminants in groundwater when groundwater levels were higher, but have since dropped, thus leaving contaminants entrained in the vadose zone.

As stated in comment 1, Kearney should evaluate if soil gas concentrations at the site, including but not limited to near the former ponds and the former main factory building, are currently contributing or will contribute to the groundwater plume.

In addition, in accordance with Part V(2) of the current post-closure permit, Kearney should address the soil gas data, which may be a potential threat to human health and/or the environment or may be an unidentified solid waste management unit (SWMU). This can be performed under a consent agreement or enforcement order, or incorporated into post-closure permit undergoing renewal.

Specific Comments on the Part B Application

- 3) Section A-3, General Description. The first paragraph on page 1 discusses the conversion corrective action with MNA and the future conversion to detection monitoring. Such discussion throughout the Part B Application and SAP should be revised based on comment 1 above.
- 4) Section A-3, General Description. The sixth paragraph of this section (fourth paragraph on page 2) discusses the April 2014 soil and soil gas sampling report. GSU has not yet reviewed this document and cannot comment on the discussion provided in Sections A-3 and H of the Part B Application. However, at this time GSU assumes that both the indoor air pathway and the leaching to groundwater pathway will need to be addressed by Kearney.
- 5) Section A-3, General Description. The seventh paragraph of this section (last paragraph on page 2) states that as of the date of the document (June 2014), there has been no rebound. As discussed in comment 1 above and in our memorandum reviewing the second and third quarter 2014 reports, rebound is occurring. The Part B Application should be revised to discuss current concentrations, including locations with concentrations that are rebounding. Similar statements regarding the absence of rebound in Sections C, G-1d, G-1k, M-5, and the SAP should be revised accordingly.
- 6) Section E-1, Cost Estimate. This section summarizes the assumptions made for the cost estimate. This section will need to be revised based on changes to the corrective action measure selected for the site and other comments included in this memorandum.

- 7) Section G-1a, Purpose of Plan. The text states that corrective action will be complete when the water quality protection standard (WQPS) is met at the POCs. Section 66264.100(c) of title 22 states that the CLs shall be met throughout the plume, not just at the POC, in order for corrective action to be complete and to return to detection monitoring. The text should be changed accordingly, as well as similar text in other sections of the Part B Application (Sections G-1g and M-5) and the SAP (Sections 1 and 4.3.1).

Please note, text throughout the Part B Application often refers to the WQPS, when the text is in fact discussing CLs. Per section 66264.92 of title 22, the WQPS consists of the constituents of concern, CLs, POC, and monitoring points. The text should be revised to reference CLs instead of the WQPS, as appropriate.

- 8) Section G-1d, Nature and Extent of Plume. The first sentence states that groundwater extraction has established and maintained hydraulic gradients that contained migration of the contaminant plumes. However, without groundwater extraction, the plumes are no longer under control. Text in the Part B Application should be revised to discuss migration of the plume under the proposed corrective action, not just what previously occurred under the current post-closure permit, prior to the rebound study.
- 9) Section G-1g, Monitoring Program Description. The first paragraph states that the proposed corrective action of MNA will be as protective as groundwater extraction. However, as stated in comment 1 above, this statement is not supported by existing data. The Part B Application should be revised to provide support for statements regarding short-term and long-term protectiveness of the corrective action measure. Statements such as these throughout the Part B Application (including Section M-5) and the SAP should be revised.
- 10) Section G-1g, Corrective Action Monitoring (Monitoring Natural Attenuation). Text on pages 14 and 15 states that the site will be in MNA until the WQPS is met for a period of one year, then the monitoring program will switch to detective monitoring. Given the proximity of the site to drinking water wells, semiannual monitoring for one year does not provide sufficient data to determine if the site is ready to return to detection monitoring. In addition, the entire well network should be resampled before corrective action is terminated. Text regarding the termination of corrective action should be revised accordingly.
- 11) Section G-1g, Corrective Action Monitoring (Monitoring Natural Attenuation). In addition to the eight POC wells, four sentinel wells will be sampled semi-annually to monitor the site boundaries. Given the recent increases at wells across the site, eight POC wells and four sentinel wells near the site boundary is insufficient to monitor the progress of corrective action. Additional wells are needed.

Text also states that monitoring of the sentinel wells will end if concentrations are not detected for four consecutive events. Monitoring of sentinel wells should continue until corrective action is complete, although it may be appropriate to monitor at a decreased frequency.

The Part B Application and the SAP should be revised accordingly.

- 12) Section G-1g, Detection Monitoring. Once the monitoring program has reverted to detection monitoring, Kearney proposes to collect groundwater samples annually. The Part B Application does not provide justification for the annual sampling frequency, other than ensuring sufficient groundwater in SMW wells. Annual sampling is not sufficient for the first few years of detection monitoring given site history and rebounding concentrations

that did not appear for over a year. More frequent sampling should be conducted for the initial years of detection monitoring, then the frequency can be reduced only when specific criteria are met.

- 13) Section G-1g, Water Level Monitoring. Kearney proposes to measure groundwater elevations semi-annually during corrective action monitoring and annually during detection monitoring. Annual water level measurements during detection monitoring is not sufficient given the seasonal variations in groundwater elevations at the site. In addition, water levels will be measured only at the eight POC wells (corrective action and detection monitoring) and four sentinel wells (corrective action only). This is an insufficient number of wells to determine the groundwater gradient in four hydrogeological zones at the site. In addition, the POC wells are located in an approximate line. Kearney should revise the frequency and number of wells so that the rate and flow of groundwater flow can be accurately calculated.
- 14) Section G-1j, Monitoring System Operation and Maintenance Plan. Operation and maintenance is included as Section 10 of the SAP. GSU will provide more detailed comments on this section after the Part B Application has been revised.
- 15) Section G-3, Vadose Zone Monitoring Plan. Based on the findings of the April 2014 soil gas sampling report, previous conclusions that vadose zone monitoring is not applicable may no longer be appropriate. Please see comments 2 and 4 above.
- 16) Section H, Environmental Monitoring & Response Program for Air, Soil, and Soil-Pore Gas. This section should be revised based on the information in comments 1, 2, and 4 above.
- 17) M-2, Solid Waste Management Units, and Section M-3, Release from SMWU. This section should be revised based on the soil gas data discussed in comment 2 above.
- 18) M-4, Public Exposure. This section should be revised to include a discussion of public exposure to migration of impacted groundwater reaching the nearby public and private supply wells. The document should also describe the groundwater receptors in the vicinity of the site, including screen intervals for public and private supply wells. Onsite and offsite exposure to soil gas contamination should be addressed, including soil gas contamination and off gassing from groundwater.
- 19) M-5, Corrective Action Program. This text should be revised based on comments 1 and 2 above.
- 20) Table B-1, Water Quality Protection Standards. Table B-1 provides the CLs for the site. The basis for these values has not been provided in the Part B Application. As stated in section 66264.94(c), Kearney should demonstrate that achieving CLs equal to background is technically or economically infeasible and that the proposed CLs greater than background will not pose a hazard to human health and the environment. In addition, these values have not changed from previous versions of the permit; Kearney should verify that they meet current health-protective standards, which may have changed for PCE, TOE, and 1,4-dioxane. Table 1 of the SAP will also need to be updated.
- 21) SAP, Section 4.3.1, Monitoring Well Network. The text states that once the site enters detection monitoring, all wells other than POC wells will be decommissioned. Decommissioning wells is premature given site history and rebounding concentrations that did not appear for over a year. Well abandonment should be delayed until DTSC and Kearney agree that sampling of other wells will not be necessary, either under a post-closure permit or consent agreement or enforcement order. In addition, GSU will provide more detailed comments on the SAP after the Part B Application has been revised.

- 22) Statistical Evaluation Plan, Section 2.1, Statistical Design. The text states that the "WQPS concentration limit is presumed to represent a risk-based mean concentration" and that successful clean-up will be demonstrated when "the mean groundwater concentration no longer exceeds the risk-based mean represented by the WQPS concentration limit." As stated in section 66264.100(c) of title 22, CLs should be achieved at all monitoring points and throughout the zone affected by the release. CLs are not based on a mean concentration, nor should groundwater concentrations at individual wells be evaluated as a mean concentration. The SEP should be revised accordingly. GSU will provide more detailed comments on this section after the Part B Application has been revised.
- 23) Statistical Evaluation Plan, Section 2.1, Statistical Design. The SEP summarizes the statistical procedures that will be used in corrective action monitoring and detection monitoring. Typically, anthropogenic compounds such as VOCs and 1,4-dioxane are not evaluated using statistical procedures, as a confirmed detection above the CL is considered an exceedance for both detection and corrective action monitoring. The SEP should be revised accordingly.

Minor Comments on the Part B Application

- 24) Section C, Closure/Post Closure Plan. The third paragraph states that the "the renewed Post Closure Permit to be issued by DTSC upon expiration in July 2014 of the current permit will convert the method of corrective action at this site from groundwater extraction to MNA." Please note that the existing permit is extended until DTSC has made a final permit decision on the Part B Application.
- 25) SAP. Some locations in the Part B Application reference the SAP in Appendix D, whereas the SAP is located in Appendix E. Please correct and update the references as appropriate.

REFERENCES

California Department of Health Services (DHS). 1989. *RCRA Facility Assessment Preliminary Review, Kearney-KPF, Stockton, California.* August 15, 1989.