

DOCKETED

Docket Number:	23-AFC-02
Project Title:	Elmore North Geothermal Project (ENGP)
TN #:	261477
Document Title:	ENGP, MBGP and BRGP ROC Regarding Haz, Diesel Fuel
Description:	N/A
Filer:	Marichka Haws
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	1/30/2025 2:48:58 PM
Docketed Date:	1/30/2025



**Siting, Transmission
and Environmental
Protection Division**

FILE:

**PROJECT TITLE: BHER Geothermal Projects:
Elmore North, Morton Bay, Black Rock**

**Docket: 23-AFC-02,
23-AFC-01, 23-AFC-03**

TECHNICAL AREA(s): Hazards, Hazardous Materials/Waste, and Wildfire

☐ Telephone

☒ Email

☐ Meeting Location: N/A

NAME(s):

Michele Shi,
Mechanical Engineer

DATE: 1/9/2025

TIME:
N/A

WITH:

Jerry Salamy, Project Manager, Jacobs Engineering (BHER's Consultant)

SUBJECT:

Geothermal AFCs, Request for Clarification on Diesel Fuel

COMMENTS:

CEC staff (staff) requested clarification on the hazardous materials use and quantity, specifically on diesel fuel, from the applicant via email on December 3, 2024. Staff's request came following the receipt of the comments on the Preliminary Staff Assessment (PSA) by the applicant's consultant, Jacobs Engineering (TN 258976, TN 258975, TN 258977). The PSA comments by the applicant's consultant specified that there would be "up to four emergency standby diesel fueled engines." In response to staff's request, Jerry Salamy provided via email on January 9, 2025, updated Hazardous Materials Management Tables 5.5-1 for the Elmore North/Morton Bay (Attachment I) and Black Rock (Attachment II) sites.

cc: Kenneth Salyphone, Inspection Unit
Supervisor, CEC

Signed:

_____|s|_____

Name:

Michele Shi, Mechanical Engineer

Attachment I: ENGP-MBGP Haz Mat Table 5.5-1 update_2025-01-09

Table 5.5-1. Use and Location of Hazardous Materials

Chemical ^a	Use	Maximum Quantity Onsite (gallons, lbs, tons)	Annual Quantity (gallons, lbs, tons)	Storage Location (General Arrangement Location Code)	State	Type of Storage
Chemical Treatment CL41	Oxidizing Biocide	1,000 gallons	6,250 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CL456	Biodetergent	250 gallons	1,500 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CL5428	Dispersant	250 gallons	1,500 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CT775	Corrosion Inhibitor	250 gallons	1,500 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CL2065	Nonoxidizing Biocide	500 gallons	3,000 gallons	Cooling Tower (62)	Liquid	Continuously onsite
HASA 12.5% Sodium Hypochlorite Solution	Oxidizing Biocide	3,000 gallons	36,000 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat C2187T	Oxidizing Biocide – H ₂ S Abatement	2,000 lbs	125,000 lbs	Cooling Tower (62)	Solid	Continuously onsite
ChemTreat C2184G	Oxidizing Biocide – H ₂ S Abatement	500 lbs	2,200 lbs	Cooling Tower (62)	Solid	Continuously onsite
NALCO GEO901	Norms Inhibitor	6,000 gallons	110,000 gallons	NORMS (60)	Liquid	Continuously onsite
NALCO N7471 Antifoam	Antifoaming Agent	900 gallons	13,140 gallons	HP Separator Area (59)	Liquid	Continuously onsite
NALCO 1720	Oxygen Scavenger	500 gallons	9,000 gallons	Clarifier (61)	Liquid	Continuously onsite
GEO912	Scale Inhibitor	3,000 gallons	20,075 gallons	HP Separator (2524)	Liquid	Continuously onsite
NALCO N9907	Polymer/Flocculant	4,000 lbs	57,670 lbs	Clarifier (61)	Solid	Continuously onsite
Battery Electrolyte	UPS and Emergency Shutdown Battery Array	1,200 gallons	1,800 gallons	Battery Rooms (37)	Liquid	Continuously onsite
Diesel No. 2	Fuel for Onsite Equipment	10,000 gallons	10,000 gallons	Southwest of Cooling Tower AST (69) East of the Emergency Generators (106)	Liquid	Continuously onsite
Diesel No. 2	Fire Pump Operation	1,000 gallons	1,000 gallons	Fire Water Pump AST (39)	Liquid	Continuously onsite
Diesel No. 2	Emergency Generator Operation (3 units)	25,352 15,768 gallons	25,352 15,768 gallons	Emergency Generators (46, 47)	Liquid	Continuously onsite
Hydrochloric Acid <37%	Filter Press Wash	1,250 gallons	24,000 gallons	Filter Press (7)	Liquid	Continuously onsite
Sulfur Hexafluoride	Circuit Breakers/TET Test	300 lbs	300 lbs	Switchyards/Resources Test Unit (4, 54)	Gas	Continuously onsite
Anti-Freeze and Coolant	Portable Equipment in Shop	2,000 gallons	2,000 gallons	Maintenance Building (65)	Liquid	Continuously onsite

Chemical ^a	Use	Maximum Quantity Onsite (gallons, lbs, tons)	Annual Quantity (gallons, lbs, tons)	Storage Location (General Arrangement Location Code)	State	Type of Storage
Naphtha	Portable equipment in Shop	500 gallons	500 gallons	Maintenance Building (65)	Liquid	Continuously onsite
Hydraulic Fluid	Portable Equipment in Shop/Equipment	4,000 gallons	4,000 gallons	Maintenance Building/Filter Press (65,7)	Liquid	Continuously onsite
Laboratory Reagents	Geothermal Fluids/Filter Cake Laboratory Analysis	10 gallons	10 gallons	Laboratory/Chemical Storage Cabinets (5)	Liquid and Granular Solid	Continuously onsite
Turbine Lubrication Oil	Lubricate Rotating Equipment (e.g., steam turbine bearings, valves)	22,000 gallons	22,000 gallons	Lubricating oil reservoirs adjacent to the steam turbine and drum storage in lubricant storage shed/warehouse (63,69,70,102,103)	Liquid	Continuously onsite
Mineral Insulating Oil	Transformers	45,000 gallons	30,000 gallons	Transformers and drum storage in lubricant storage shed (38,44,102,103,25,26,38)	Liquid	Continuously onsite
Acetylene	Welding Gas	750 cubic feet	750 cubic feet	Maintenance Building (56)	Gas	Continuously onsite
Oxygen	Welding Gas	750 cubic feet	750 cubic feet	Maintenance Building (56)	Gas	Continuously onsite
Propane	Torch Gas	750 cubic feet	750 cubic feet	Maintenance Building (56)	Gas	Continuously onsite
Alloy Mix Gas	Welding Gas	750 cubic feet	750 cubic feet	Maintenance Building (56)	Gas	Continuously onsite
Lab Gas (Helium, Argon, Nitrogen, Air)	Laboratory	750 cubic feet	750 cubic feet	Laboratory (5)	Gas	Continuously onsite
Liquid Argon	Laboratory	500 gallons	500 gallons	Laboratory (5)	Liquid	Continuously onsite
Cleaning Chemicals	Cleaning	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Control Room (5)	Liquid or Solid	Continuously onsite
Paint	Touchup of Painted Surfaces	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Control Room (5)	Liquid	Continuously onsite

Notes:

AST = aboveground storage tank

H₂S = hydrogen sulfide

HP = high pressure

lb = pound(s)

UPS = uninterruptible power supply

^a Chemical vendor may be subject to change; however, chemical class will remain the same or similar.

Attachment II: BRGP Haz Mat Table 5.5-1 update_2025-01-09

Table 5.5-1. Use and Location of Hazardous Materials

Chemical ^a	Use	Maximum Quantity Onsite (gallons, lbs, tons)	Annual Quantity (gallons, lbs, tons)	Storage Location (General Arrangement Location Code)	State	Type of Storage
Chemical Treatment CL41	Oxidizing Biocide	1,000 gallons	3,250 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CL456	Biodetergent	250 gallons	750 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CL5428	Dispersant	250 gallons	750 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CT775	Corrosion Inhibitor	250 gallons	750 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat CL2065	NonNonoxidizing Biocide	500 gallons	1,500 gallons	Cooling Tower (62)	Liquid	Continuously onsite
HASA 12.5% Sodium Hypochlorite Solution	Oxidizing Biocide	3,000 gallons	18,000 gallons	Cooling Tower (62)	Liquid	Continuously onsite
ChemTreat C2187T	Oxidizing Biocide – H ₂ S Abatement	2,000 lbs	75,000 lbs	Cooling Tower (62)	Solid	Continuously onsite
ChemTreat C2184G	Oxidizing Biocide – H ₂ S Abatement	500 lbs	1,100 lbs	Cooling Tower (62)	Solid	Continuously onsite
NALCO GEO901	Norms Inhibitor	6,000 gallons	73,000 gallons	NORMS (60)	Liquid	Continuously onsite
NALCO N7471 Antifoam	Antifoaming Agent	900 gallons	6,570 gallons	HP Separator Area (59)	Liquid	Continuously onsite
NALCO 1720	Oxygen Scavenger	500 gallons	4,500 gallons	Clarifier (61)	Liquid	Continuously onsite
GEO912	Scale Inhibitor	3,000 gallons	14,600 gallons	HP Separator (25)	Liquid	Continuously onsite
NALCO N9907	Polymer/Flocculant	4,000 lbs	47,450 lbs	Clarifier (61)	Solid	Continuously onsite
Battery Electrolyte	UPS and Emergency Shutdown Battery Array	1,200 gallons	1,200 gallons	Battery Rooms (37)	Liquid	Continuously onsite
Diesel No. 2	Fuel for Onsite Equipment	1,000 16,768 gallons	21,000 16,768 gallons	Generators (3 units), Fire Water Pump AST (47 ,39)	Liquid	Continuously onsite
Hydrochloric Acid <37%	Filter Press Wash	1,250 gallons	12,000 gallons	Filter Press (7)	Liquid	Continuously onsite
Sulfur Hexafluoride	Circuit Breakers/TET Test	300 lbs	300 lbs	Switchyards/Resources Test Unit (4, 54)	Gas	Continuously onsite
Anti-Freeze and Coolant	Portable Equipment in Shop	1,000 gallons	1,000 gallons	Maintenance Building (56)	Liquid	Continuously onsite
Naphtha	Portable Equipment in Shop	250 gallons	250 gallons	Maintenance Building (56)	Liquid	Continuously onsite
Hydraulic fluid	Portable Equipment in Shop/Shop/Equipment	2,000 gallons	2,000 gallons	Maintenance Building/Filter Press (5,76)	Liquid	Continuously onsite

Chemical ^a	Use	Maximum Quantity Onsite (gallons, lbs, tons)	Annual Quantity (gallons, lbs, tons)	Storage Location (General Arrangement Location Code)	State	Type of Storage
Laboratory reagents	Geothermal Fluids/Filter Cake Laboratory Filter Cake Laboratory Analysis	5 gallons	5 gallons	Laboratory/chemical storage cabinets (5)	Liquid and Granular Solid	Continuously onsite
Turbine Lubrication Oil	Lubricate Rotating Equipment (e.g., steam turbine bearings, valves)	12,000 gallons	12,000 gallons	Lubricating oil reservoirs adjacent to the steam turbine and drum storage in lubricant storage shed/warehouse (6370,102,103,104)	Liquid	Continuously onsite
Mineral Insulating Oil	Transformers	22,000 gallons	15,000 gallons	Transformers and drum storage in lubricant storage shed (38, 4437, 56)	Liquid	Continuously onsite
Acetylene	Welding Gas	500 cubic feet	500 cubic feet	Maintenance building (56)	Gas	Continuously onsite
Oxygen	Welding Gas	500 cubic feet	500 cubic feet	Maintenance building (56)	Gas	Continuously onsite
Propane	Torch Gas	500 cubic feet	500 cubic feet	Maintenance building (56)	Gas	Continuously onsite
Alloy Mix Gas	Welding Gas	500 cubic feet	500 cubic feet	Maintenance building (56)	Gas	Continuously onsite
Lab Gas (Helium, Argon, Nitrogen, Air)	Laboratory	500 cubic feet	500 cubic feet	Laboratory (5)	Gas	Continuously onsite
Liquid Argon	Laboratory	300 gallons	300 gallons	Laboratory (5)	Liquid	Continuously onsite
Cleaning Chemicals	Cleaning	Varies (< 25 gallons of fluids or 100 lbs of solid for each chemical)	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Control Room (5)	Liquid or Solid	Continuously onsite
Paint	Touch-up of Painted Surfaces	Varies (< 25 gallons of fluids or 100 lbs of solid for each chemical)	Varies (< 25 gallons of fluids or 100 lbs of solids for each chemical)	Control Room (5)	Liquid	Continuously onsite

Notes:

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