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EXOGENOUS GEOLOGICAL PROCESS ACTIVATIONS IN THE RUSSIAN FEDERATION (2007–2025)

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This file contains information about the geospatial dataset "Exogenous Geological Process Activations in the Russian Federation (2007–2025)" 10.5281/zenodo.19787928, including the fields description and codebooks.
Note: data are in Russian, this codebook provides Russian-English descriptions

DATASET OVERVIEW

- Total records: 13 086
- Time span: Q1 2007 – Q4 2025
- Geographic coverage: Russian Federation
- Content: the EGP type, text location and coordinates, time of manifestation, factors of activation, and a description of occurrence.
- Geospatial format: points with lat-lon coordinates of varying precision

DATA ORIGIN

Quarterly public survey reports 2007-2025, issued by the Gidrospetsgeologiya, a branch of the Federal Agency for Mineral Resources (Rosnedra).
The original reports in pdf format are available at: https://geomonitoring.ru/MEGP.php

DATA CONTENT

Field Name	Field Description	Data example
id	Unique event identifier	2013_I_23.13.01
process_type	EGP type abbreviation (see a codebook below)	Пт
latitude	Coordinate in WGS-84 (0 – absence of information)	43.55008
longitude	Coordinate in WGS-84 (0 – absence of information)	39.78774
accuracy	Coordinate accuracy notification (see a codebook below)	точка ЭГП
coord_source	Source of coordinates (see a codebook below)	отчет
federal_district	Administrative division unit – federal district (set of regions)	Южный
region	Administrative division unit – region	Краснодарский край
location	Text address description	г. Сочи, Хостинский район
date_start, month_start, year_start	Observed start of the process manifestation (0 – absence of information)	28 02 2013
date_end, month_end, year_end	Observed end of the process manifestation (0 – absence of information, inc. not stopped at the report moment)	0 03 2013
flag_completed	Process status as of the reporting date (1 – active, 0 – stopped)	1
activation_factors	Assumed triggers of the process activation (see a	Геол.

	codebook below)	
impact_description	Description of the manifestation and consequences	Разрушена придомовая территория, подпорная стена
year_report	Year of the source report	2013
quarter _report	Quarter of the source report	1

Codebook: <accuracy> : Coordinate accuracy notification

The source reports provide the coordinates only in 2019–2025 (56% of the dataset records). The coordinates for earlier data are restored using automatic geocoding of a text address, usually containing an indication of the region, district (sub-region administrative level), and settlement or road name. The result is controlled by reverse geocoging and address components matching.

Abbreviation – RUS	**Abbreviation – ENG**	**Description**
точка ЭГП	EGP point	The coordinates are taken directly from a source report, thus the exact location of the EGP is provided. A location can be considered as “high precision”.
поселение/дорога	settlement/road	The text address from a source report is used for geocoding, and a settlement or a road segment is successfully identified. A location can be considered as “medium precision”.
район	district	The text address from a source report is used for geocoding, and a district is successfully identified (its centroid coordinates are allocated). A location can be considered as “low precision”.
0	0	Automatic geocoding was not successful.

Codebook : <coord_source> : Source of coordinates

Abbreviation -- RUS	**Abbreviation – ENG**	**Description**
роснедра	rosnedra	The coordinates are coming from a source report.
nominatim	nominatim	The coordinates are a result of classical geocoding using Nominatim / OpenStreetMap
yandexgpt-5-lite	yandexgpt-5-lite	The coordinates are a result of geocoding using a GPT-model by Yandex (YandexGPT-5 Lite) with a task of coordinate searching. Many coordinates finally origins from the OpenStreetMap, but GPT deals better with non-standardized address spelling.
skdf	skdf	The coordinates are a result of geocoding using a road dataset from governmental agency SKDF (Road Fund Control Service) that includes segment names.

Codebook : < process_type > : EGP type abbreviation

Abbreviation – RUS	**EGP type – RUS**	**EGP type – ENG**	**Description**

Abbreviation – RUS	EGP type – RUS	EGP type – ENG	Description
Оп	Оползень	Landslide	A mass movement of soil, rock, or debris down a slope, leaded by gravity and usually triggered by mass moistening. It can be quick or long-lasting, shallow or deep.
Об	Обвал	Rockfall	A sudden collapse or detachment of a large pies of solid rock from a cliff or steep slope.
Ос	Осыпь	Scree	A rotation-dominated downslope movement of rock fragments and other debris, caused by gravitation only, without water.
Се	Сель	Mudflow, debris flow	A fast-moving, canalized in a channel flow of mix of water, mud, and debris in various proportion, usually occurring in mountainous regions after heavy rainfall or snowmelt.
Оя	Оползни-сплывины	Slump landslide	Flow-like, coherent movement of a water-saturated shallow soil layer.
Эб	Эрозия боковая (речная)	Lateral (River) Erosion	Erosion occurring along the sides of riverbanks, primarily due to the flow of water, gradually widening the river's course.
Эо	Эрозия овражная	Gully Erosion	Erosion that forms deep, steep-sided channels (gullies) as water runoff cuts through soil, usually in areas with loose or poorly vegetated soil.
Эп	Эрозия плоскостная	Sheet Erosion	A uniform removal of thin layers of soil over a wide area, often caused by rainfall and surface runoff.
Пт	Процесс подтопления	Waterlogging	A rise in groundwater levels, caused by natural or anthropogenic changes in hydrological and hydrogeological conditions.
Су	Суффозия	Suffosion	Mechanical removal of fine soil particles due to the transport by seepage flow, usually accompanied by a formation of sinks, holes, and cavities that can collapse.
Ка (КС)	Карст (карстово-суффозионный)	Karst (Karst with Suffosion)	Dissolution of soluble bedrock, such as limestone, accompanied by a formation of sinks, holes, and cavities that can collapse.
На	Наледь	Aufeis	A sheet-like mass of layered ice that forms from successive flows of ground or river water during freezing temperatures.
Аб	Абразия	Sea Coastal Erosion	The process by which waves, currents, and tidal actions wear away the shoreline, leading to the loss of land and alteration of sea coastal features.
ПБ	Переработка берега	Inland Coastal Erosion	Coastal erosion that take place on inland water bodies, mainly on artificial reservoirs.
От	Оседание территории	Ground Subsidence	The gradual sinking or downward settling of the Earth's surface, often due to underground mining, groundwater extraction, or natural geological processes.
Пр	Просадки	Settling	The relatively quick sinking of the ground surface, typically caused by compaction of soil

Abbreviation – RUS	EGP type – RUS	EGP type – ENG	Description
			or loss of support, leading to surface unevenness.
Тэ	Термоэрозия	Thermoerosion	The process of erosion, usually of a gully-like type, on permafrost soil.
Тк	Термокарст	Thermokarst	A type of land deformation caused by the thawing of permafrost, leading to the formation of depressions, mounds, and uneven ground surfaces.
Де	Эоловая дефляция	Aeolian Deflation	Erosion caused by wind, which removes fine particles of soil, often in arid or semi-arid regions, leading to the formation of dunes or barren areas.
Эа	Эоловая аккумуляция	Aeolian Accumulation	A wind transport and deposition of sand, dust, or other particules, forming dunes and sandbars in arid or semi-arid environments.
Multi-type combinations			
ГЭ (ГА)	Гравитационно-эрозионный комплекс	Gravitation-Erosion Process	A combination of erosion and gravitational processes on slopes.
КР (Тк, Пу)	Криогенные процессы	Cryogenic Processes	Mix of permafrost-related processes, leading to the surface deformation, such as thermoerosion, thermokarst, frost heaving, etc.
Гр	Гравитационные процессы	Gravitation Processes	Any kind of the gravity-driven processes (landslides, rockfalls, etc).
Та	Талые процессы	Melting-related Processes	A combination of snow and glacier melting in mountains and the resulting erosion- or gravity-related such as debris flow, gully erosion or landslides.
Эр	Эрозионные процессы	Erosion Process	Any kind of the water-driven erosion processes (landslides, rockfalls, etc).

Codebook : <activation_factors> : Triggers of the process activation

Abbreviation - RUS	Trigger type – RUS	Trigger type – ENG	Description
Атм.	Атмосферные факторы	Atmosphere	Meteorological phenomena that have a direct or indirect effect on the rocks and soils state, such as precipitation, snowmelt, evaporation, and others.
Гидрол.	Гидрологические факторы	Hydrology	Regime and state of surface water bodies (rivers, watercourses, lakes, reservoirs), including wave conditions, flow velocity, water level, ice regime and others.
Гидрогеол.	Гидрогеологические факторы	Hydrogeology	Conditions of occurrence, movement, regime and properties of groundwater. These include depth of occurrence, level fluctuations, pressure, chemical composition, infiltration rate, and others.

Abbreviation - RUS	Trigger type – RUS	Trigger type – ENG	Description
Техн.	Техногенные факторы	Man-made	Effects of any human activity, for instance engineering and economics, on the geological environment, leading to changes in environmental properties and activation of exogenous processes.
Сейсм.	Сейсмические факторы	Seismicity	Consequences of occurrence and propagation of seismic waves during earthquakes.
Геол.	Геологические факторы	Geology	Area geological properties and rock properties predisposing it to the development of exogenous processes, such as rock type and fissuring.
Эр.	Эрозионные факторы	Erosion	Mechanical destruction activity of temporary and permanent watercourses.
Аб.	Абразионные факторы	Coastal erosion	Mechanical destruction of the sea or inland water body shores under the influence of waves.
Темп.	Температурные факторы	Temperature	Fluctuations in the temperature of rocks (soil) and air that affect rock (soil) physical and mechanical properties on a long or short term, for instance freezing and thawing.